

BAYCORP DEVELOPMENT, INC.

**REQUEST FOR CONDITIONAL USE DISTRICT AND
PERMIT**

**1.3510 ACRE PARCEL LOCATED
ON WEST SIDE OF U.S. 15-501
JUST SOUTH OF MANNS CHAPEL ROAD**

June 19, 2006

DEVELOPMENT TEAM

Sean McCall
Baycorp Development, Inc.
146 Second Street North
Unit 302
St. Petersburg, Florida 33701
(727) 823-7219

Developer

Piver & Associates, P.A.
8009 Creedmore Rd. Suite 200
Raleigh, NC 27613
Telephone (919) 844-9060
Contact: Bill Piver, P.E.

Civil Engineer

Bradshaw & Robinson, LLP
Post Office Box 607
Pittsboro, North Carolina 27312
Telephone: (919) 542-2400
Contact: Patrick E. Bradshaw

Attorney

Ramey Kemp & Associates, Inc.
4928-A Windy Hill Drive
Raleigh, North Carolina 27609
Telephone: (919) 872-5115
Contact: Rynal Stephenson

Traffic Consultant

Blakely Design Group
700 Exposition Pace, Suite 105
Raleigh, NC 27615
(919) 870-1868:
Contact: Taylor Blakely

Landscape Architect

STATEMENT OF PURPOSE

Baycorp Development, Inc. ("Applicant"), is applying to Chatham County for approval of a Conditional Use B-1 General Business District and a Conditional Use Permit for use of a 1.3510 acre property for a bank, savings and loan, finance company, credit agency or similar financial institution. The property is located just south of the intersection of U.S. 15-501 and Manns Chapel Road – an intersection that is a commercial crossroads, ideally located for commercial use.

This request is made pursuant to Sections 5 and 15 of the Chatham County Zoning Ordinance. As is set forth in detail in this application, the proposal is consistent with the current nearby uses, the provisions of the Zoning Ordinance and the County Land Conservation and Development Plan.

The proposed site plan shows a bank building approximately 5,000 square feet in size with on-site parking and landscaping consistent with the requirements of the Zoning Ordinance. The requested use, if approved, will make a positive contribution to the welfare of the citizens of Chatham County in the form of accessible banking services and will do so with minimum impact on neighboring properties.

APPLICATION FOR
ZONING DISTRICTS
CONDITIONAL USE DISTRICTS
CONDITIONAL USE PERMITS

Chatham County Planning Department
P.O. Box 54
Pittsboro, NC 27312

Tel: 919/542-8204
Fax: 919/542-2698
Email: lynn.richardson@ncmail.net

(1) Applicant Information:

Name: Baycorp Development, Inc.
Address: 146 Second Street North, Unit 302
St. Petersburg, Florida 33701

Phone No. (h) _____
(w) (727) 823-7219

Email: baycorp.sean@verizon.net

(2) Landowner Information (as shown on deed)

Name: Ridgely W. Cook, Jr. & Julia Ann
Cooper
Address: 126 Estes Drive Ext.
Carrboro, NC 27510

Phone No. (h) _____
(w) _____

Email: _____

(3) Property Identification:

911 Address: 11311 US 15-501
Chapel Hill, NC 27516

S.R. Name: U.S. Highway 15-501 North
S.R. Number: U.S. 15-501
Township: Baldwin
Acreage: 1.351 acres, more or less
Flood map #: 3710977600J
Flood Zone: X

P.I.N #: 9776-22-9351
Parcel#: 2639

Deed Book: 1152 Page: 283
Plat Book: _____ Page: _____

Zoning District: RA-40

Watershed District: WS-IV PA

(4) Requested Zoning District, Conditional Use District, Conditional Use Permit:
Conditional Use B-1 General Business District and Conditional Use Permit for Banks, Savings and
Loans, Finance Companies, Credit Agencies and Similar Financial Institutions.

(5) Directions to property: West side of U.S. Highway 15-501 North, approximately .12 miles south of
its intersection with Mann's Chapel Road.

(6) Attach the following, if requesting a zoning map amendment:

- List of names and addresses or current adjoining property owners (see Adjacent Landowners form)
- Written legal description - Attached
- Map of the property at a scale of not less than 1 inch equals 200 feet
- Explanation of request addressing applicable portions of Section 17.3B and 18.2A of the Chatham County Zoning Ordinance

(7) Attach Submission Materials Checklist Information (see Submission Materials Checklist form)

I hereby certify that I am the owner or authorized agent of said property and that the information provided is complete and the statements given are true to the best of my knowledge.

See Applicant Certification

Signature

Date

The owner must sign the following if someone other than the owner is making the application.

I hereby certify that _____ is an authorized agent for said property and is permitted by me to file this application.

See Owner Authorization

Signature

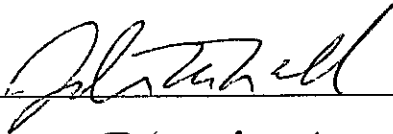
Date

APPLICANT CERTIFICATION

I hereby certify that Baycorp Development, Inc. is the authorized agent for the property identified in this Application for Zoning Districts and that the information provided is complete and the statements given are true to the best of my knowledge.

Applicant:

BAYCORP DEVELOPMENT, INC.

By: 

Print Name: John M. McCall

Title: President

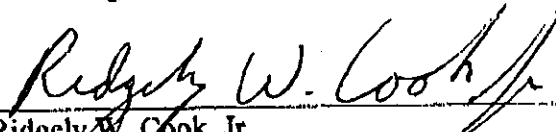
Date of Execution: 6-14-06

OWNER AUTHORIZATION FORM

Parcel ID #: 2639

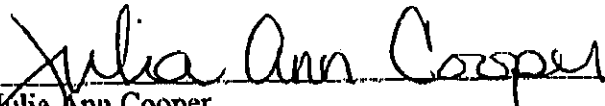
I hereby certify that Baycorp Development, Inc. is an authorized agent for the property identified in this Application for Zoning Districts and is permitted by me to file this Application.

Owner Signatures:



Ridgely W. Cook, Jr.

Date of Execution: 06/19/06



Julia Ann Cooper

Date of Execution: 06/19/2006

LEGAL DESCRIPTION OF PROPERTY

BEGINNING at a stake in the center of the old Pittsboro-Chapel Hill Road, the southwest corner of the J. M. Andrews and Minnie B. Andrews land (also B. S. Williams and Andrews Corner); thence East 3.50 chains to a stake; thence South 65° East to the center of Highway 15 and 501; thence in a northerly direction with Highway 15 a distance of 242 feet to B. S. Williams lines; thence with B. S. Williams line in a westerly direction 292 feet to a stake in the center of old Pittsboro-Chapel Hill Road; thence South 14° 30' West 221 feet to the point and place of BEGINNING being 2 acres more or less and being the same property conveyed to Allene Tripp Campbell and her late husband, J. John Wade Campbell, by deed recorded at Deed Book LJ, Page 584, Chatham County Registry; save and except all the property conveyed to the Department of Transportation by that certain deed recorded at Book 775, Page 256.

**SCHEDULE OF
ADJACENT LAND OWNERS**

1. David Curl
1364 Mt. Olive Church Road
Pittsboro, NC 27312

2. Harold McCoy
Nancy McCoy
11257 US Highway 15-501 North
Chapel Hill, NC 27517

3. Clarence M. Walters
Florence Walters
4220 Old Graham Road
Pittsboro, NC 27312

4. Joyce M. Deal
3625 Bryant Cole Way
Gastonia, NC 28056

5. Jean Williams
P.O. Box 429
Carrboro, NC 27510

6. D. Curl
H. Williams
C/O C.B. Carver, CPA
P.O. Box 3120
Chapel Hill, NC 27514

7. WRI-SRP Chatham Crossing LLC
2600 Citadell Plaza Drive
Houghton, TX 77008

8. Roland P. Eubanks
11188 US Highway 15-501 North
Chapel Hill, NC 27517

DESCRIPTION OF THE PROJECT

The Applicant intends to develop the parcel generally in accordance with the site plan attached hereto as **EXHIBIT A**. Upon establishment of the Conditional Use B-1 General Business District, Applicant requests a Conditional Use Permit approving use of the property as a bank, savings and loan, finance company, credit agency or similar financial institution, generally in accordance with the site plan attached as **EXHIBIT A**.

Location:

- (1) Public Highways. The property adjoins US Highway 15-501 on the west, or south-bound, side.
- (2) Private Roads. There are no private roads involved. The attached site plan shows the approved driveway entrance to the property.
- (3) Current Zoning. The current zoning of the site is RA-40.
- (4) Watershed Classification. The watershed classification is WS-IV-PA. Because this project does not have a curb and gutter street system, up to thirty-six percent (36%) impervious surface or "built-upon area" is allowed. To satisfy the impervious surface ratio requirement, all impervious surface will be removed from the three (3) existing residential lots and the road right of way adjoining the property to the west, as shown on **EXHIBIT A**, and restrictions will be recorded in the Chatham County Registry requiring those properties to be left vacant for so long as the requested Conditional Use Permit is in effect. The actual projected impervious surface, incorporating the adjacent properties described above, is 36.0%.
- (5) Major Wildlife Areas. This site is not in or adjacent to any area designated as a natural area according to the "Inventory of the Natural Areas and Wildlife Habitats of Chatham County, North Carolina."
- (6) Size in Acres of Site. The size of the site is approximately 1.3510 acres.
- (7) Utility or Other Easements. Rights of way for US 15-501 serve the site. No other known easements affect the property.
- (8) Current Use. The site is currently used as a residence for a tenant.

(9) Current Contents of Site. The site currently contains a mobile home and a small storage barn.

(10) Other Conditional Use Permits Granted for the Site. No conditional use permits have been granted previously for the site.

Description of Use:

The proposed use of the property is grounds and facilities for a bank, savings and loan, finance company, credit agency or similar financial institutions.

Site Plan and Drawing:

The proposed site plan and boundary survey attached as **EXHIBITS A and B**, respectively, describe the site in detail. The driveway location and exterior landscaping will be as shown on the attached **Exhibits A and C**.

(1) Existing Buildings. The existing structures will be removed.

(2) New Buildings. The proposed new building is to be located generally as shown on the site plan attached hereto as **EXHIBIT A**. The footprint of the anticipated building will be approximately 5,000 square feet.

(3) Landscape Plan The attached landscaping plan calls for an appropriate landscaping buffer between the building and the residential uses to the south. In addition, the Chatham County screening and buffering requirements from Table 6-A of the Design Guidelines will be followed with respect to all adjoining properties. The parking lot landscaping also meets the Zoning Ordinance requirements set forth in Section 12.2. Please see the Landscape Plan site plan attached as **EXHIBIT C**.

(4) Screening/Buffering Plan, Setbacks. As to screening and buffering, see above. As to B-1 setbacks, all such setbacks, including the 50 foot front set back will be complied with as indicated on **Exhibit A**. The parking lot will be more than 10 feet from the public right of way as required by section 12.2 of the Zoning Ordinance.

(5) Natural Preserved Areas. The adjoining properties to the west will be cleared of structures and preserved in a natural or landscaped condition.

(6) Site Boundaries with Adjacent Properties. The boundaries between the site and adjacent properties are shown on the site plan. The names and addresses of adjoining land owners are provided with this application.

(7) Parking. The proposed parking areas for employees and customers are shown on the proposed site plan. Section 12 of the Zoning Ordinance requires at least 1 space per 200 feet of gross floor area. Thus, for a 5,000 square foot building, at least 25 spaces would be required. The site plan shows 39 spaces. All stacking requirements will be complied with if needed for the ultimate user.

(8) Sign Location, Type and Size. Signage at the entrance will comply with Section 13.7 of the Zoning Ordinance. The main sign at the 15-501 entrance will be no larger than two square feet per lineal foot of frontage on 15-501. The sign will not exceed a size of 150 square feet.

(9) Areas Reserved for Future Development or Improvements. If approved, the entire site will be developed in accordance with the proposed site plan.

(10) Lighting Plan. The drafted but as yet unapproved Chatham County Lighting ordinance will be followed.

(11) Percentage of Impervious Surface. The plan, including the parking lot, driveway and building, contains a proposed impervious surface of 36.0%, the ratio allowed under the watershed ordinance.

(12) Topographical Description of Site. A topographical map is attached as **EXHIBIT D**.

(13) County Road Map. A county road map identifying the location of the property is provided as **EXHIBIT E**.

(14) County Tax Map. A copy of the county tax map of this site is provided as **EXHIBIT F**.

Start and Completion Projections:

The projected start date for construction of the structure is estimated to be in early 2007. Depending on the start date, the projected completion date is estimated to be near the end of 2007.

Adjoining Property Owners:

The names and addresses of the adjoining property owners are on the attached schedule.

Reference to Existing County Plans:

Because of its location near the commercially strategic and convenient crossroads of U.S. 15-501 and Manns Chapel Road, the project meets and conforms to the Chatham County Land Conservation and Development Plan (the "Land Use Plan").

At the outset of the Land Use Plan, two fundamental policies are set forth, both of which are met by this proposal. The first general policy is that land development will reflect balanced growth by, in part, ensuring that development is "guided to suitable locations and is designed appropriately." *Land Use Plan, p. 1.* This proposal is certainly in a suitable location in that it is near the critical commercial intersection in Northeast Chatham County. Commercial development exists on all quadrants of the intersection at this time. This parcel with frontage on U.S. 15-501 is ideally suited for business uses. The location is suitable and the design will conform to or exceed all County standards set forth in the Design Guidelines and other applicable ordinances.

The second general policy of the Land Use Plan is that development be open, proactive and cooperative. Because the process involved is a request for a conditional use permit, a public hearing will be held after a public advertisement is published. The property will be posted with signs giving notice of the public hearing on the matter. The project has been designed specifically to take into account nearby residential areas and to fold it nicely into existing commercial/business uses.

In addition to conforming to the general policies of the land Use Plan, the proposal meets with the relevant Major Recommendations of the Land Use Plan as well. The proposed development meets squarely with recommendations 9, 12 and 17 which are the recommendations that relate specifically to commercial development. The property is located in what would certainly be an "economic development center" and a "cross-roads commercial center" under the Land Use Plan, although those zones have never been formally adopted.

The Land Use plan also states the following objectives that are met by the current proposal:

1. "Site commercial uses along major highways in clusters at specific, designated locations. . ." *Land Use Plan, p. 10.*
2. "Site commercial clusters so that they might be able to be served by transit in the future, especially along U.S. 15-501 north of Pittsboro." *Land Use Plan, p. 10.*

3. "Site commercial clusters so that they extend up side roads off main thoroughfares . . ." *Land Use Plan, p.10*
4. With respect to economic development centers, the Land Use Plan specifically highlights locations "in the northern part of the County within the U.S. 15-501 corridor." *Land Use Plan, p. 33.*

FINDINGS REQUIRED BY ZONING ORDINANCE

The Chatham County Zoning Ordinance requires that the Board of Commissioners make five affirmative findings in establishing a conditional use district and in granting a conditional use permit. All five findings are supported by this application.

Finding #1: *The use requested is among those listed as an eligible conditional use in the district in which the subject property is located or is to be located.*

(1) Validation of Use in Zoning Ordinance: The requested uses are allowed uses within the requested Conditional Use B-1 General Business District and, as such, are eligible conditional uses within the district.

(2) Land Development Plan Reference: This application is consistent with the Land Use Plan. Please see the discussion under "Reference to Existing County Plans" above.

Finding #2: *The requested conditional use permit is either essential or desirable for the public convenience or welfare.*

(1) Need and Desirability: The proposed business uses will be beneficial to the County by providing necessary services to the local citizenry, by increasing ad valorem real and personal property tax revenue and by adding to the number of local jobs available to County residents. The location of numerous commercial uses near this property leads to the conclusion that conversion of the property from residential to commercial is appropriate. Further, given the significant residential growth in the area, including the approved Briar Chapel subdivision, banking and similar financial services will certainly be in demand in this location.

(2) Survey of Similar Uses: The anticipated use as a bank property is needed in the area. The only bank branch located between the County line and Fearington Village is the new State Employees Credit Union located at Old Lystra Rd. and U.S. 15-501. Many people travel to Chapel Hill for branch banking services.

(3) Public Provided Improvements: No additional public improvements will be needed for this project.

(4) Tax Considerations: Although it is difficult to predict with precision the tax revenue benefit to Chatham County, it is expected that this project will result in an increase in assessed value of the subject property. Tax revenue will be generated by improvements made to this real property, which is now being taxed as residential real property. The current prorated ad valorem real property tax revenue generated by the 1.351 acres at issue is approximately \$500.48 annually. The proposed bank use and the attendant new commercial structure will add property tax revenues. Assuming a very conservatively estimated post-construction combined value of the land and improvements of \$2,565,000.00 and using the current combined tax rate of \$.657 per \$100 dollars of assessed value, the ad valorem real property tax revenue alone would increase to approximately \$16,852 annually, a significant increase. The value and the associated tax revenue will only increase with time. Demands on County services will be minimal. This use will not increase the County school population, will not require infrastructure improvements from the County and will have no significant impact on County fire, law enforcement or rescue services.

(5) Employment: After the property is built-out and operational, it is expected that there will ultimately be approximately 10-15 full-time employees. Construction of the structure will provide temporary employment for a number of persons involved in the building trades and professions. Although it is not currently possible to describe the salary ranges of those employees, some of the personnel will be professional skilled employees who will be appropriately compensated. Compensation of all employees is expected to be competitive in the local market.

***Finding #3:** The requested permit will not impair the integrity or character of the surrounding or adjoining districts, and will not be detrimental to the health, safety, or welfare of the community.*

This location is appropriate for a bank. The parcel is adjacent to other commercial uses and, where residential uses adjoin, more than adequate buffering is proposed. The proposal is certainly in character with the existing uses. The proposal will not be detrimental in any way to the health safety or welfare of the community.

(1) Emergency Services: The bank or similar facility is expected to make very limited demands on fire and police protection and emergency services. This is certainly true as compared to other possible uses of the subject property, such as residential.

(2) Traffic: The site will have no significant impact on area traffic. A traffic study performed by Ramey Kemp & Associates, Inc. for the parcel concluded that the nearby intersection of U.S. 15-501 and Mann's Chapel Road will function at an acceptable level of service whether or not the proposed site is developed. The DOT has made a site visit and has concluded that the driveway proposed will be acceptable. See **EXHIBIT G**.

(3) Visual Impact and Screening: This project is designed as much as possible to have a minimal impact on neighbors. The attached landscape plan, **EXHIBIT C**, evidences compliance with applicable buffering and screening requirements.

(4) Lighting: Exterior lighting will be down-lighting with direct glare shielded from adjoining roads and properties. The lighting will be in compliance with the draft Chatham County Lighting Ordinance.

(5) Noise: The proposed uses will produce ordinary levels of noise. No industrial or significant noise-generating activities or uses are proposed.

(6) Chemicals, Biological and Radioactive Agents: Given the proposed uses, none are anticipated.

(7) Signs: Signage at the entrance will comply with Section 13.7 of the Zoning Ordinance. The main sign at the 15-501 entrance will be no larger than two square feet per lineal foot of frontage on 15-501. The sign will not exceed a size of 150 square feet.

***Finding #4:** The requested permit will be consistent with the objectives of the Land Development Plan.*

(1) Land Development Plan Reference: This application is consistent with the Land Use Plan. Please see the discussion under "Reference to Existing County Plans" above.

(2) Watershed Considerations: The watershed classification is WS-IV-PA. Because this project does not have a curb and gutter street system, up to thirty-six percent (36%) impervious surface or "built-upon area" is allowed. To satisfy the impervious surface ratio requirement, all impervious surface will be removed from the three (3) existing residential lots and the road right of way adjoining the property to the west, as shown on **EXHIBIT A**, and restrictions will be recorded in the Chatham County Registry requiring those properties to be left vacant for so long as the requested Conditional Use Permit is in effect. The actual projected impervious surface, incorporating the adjacent properties described above, is 36.0%.

Finding #5: *Adequate utilities, access roads, drainage, sanitation and/or other necessary facilities have been or are being provided.*

(1) Water Source and Requirements: The improvements will rely on the County water system. The proposed uses will not appreciably tax the County's water resources.

(2) Wastewater Management: Wastewater will be disposed of by the nearby Cedar Village private waste disposal system that serves the adjacent residential subdivision or by conventional septic methods. The Division of Water Quality of the North Carolina Department of Environmental and Natural Resources has indicated that it would consider a request to add the subject property to the Cedar Village system if certain conditions are met. See **EXHIBIT H**.

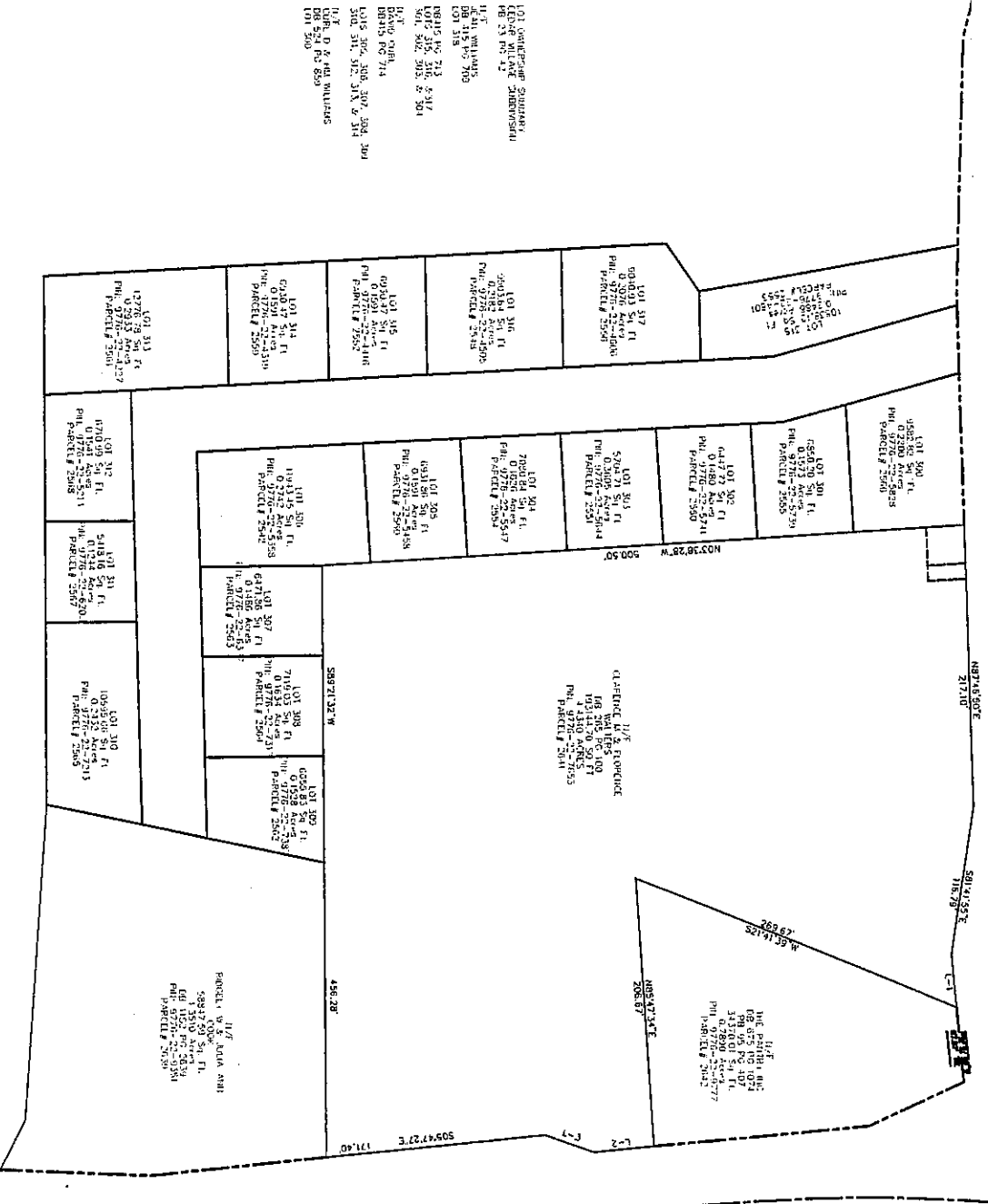
(3) Access Roads: The subject property directly adjoins US 15-501.

(4) Stormwater Runoff: A dry detention basin measuring 30' x 60' x 3' will capture the first 1" of stormwater runoff. The basin is sized sufficiently to absorb the "one year, 24-hour storm" (approximately 3" of rain). The basin will be located so as to minimize flow from the site during rain events. Neighboring properties should not experience increases in runoff except in unusual rain events.

CONCLUSION

The proposed application is consistent with the five necessary findings and will enhance the area by adding a needed, attractive bank or other financial institution use. The Applicant respectfully requests that the request for a conditional use district and permit be granted.

EXHIBIT B



LINE	BEARING	DISTANCE
L-1	N83°57'50"E	41.07'
L-2	S03°13'11"E	46.41'
L-3	S19°13'43"W	40.36'

SURVEY DATA PROVIDED BY - STALLINGS SURVEYING WAKE FOREST, NC

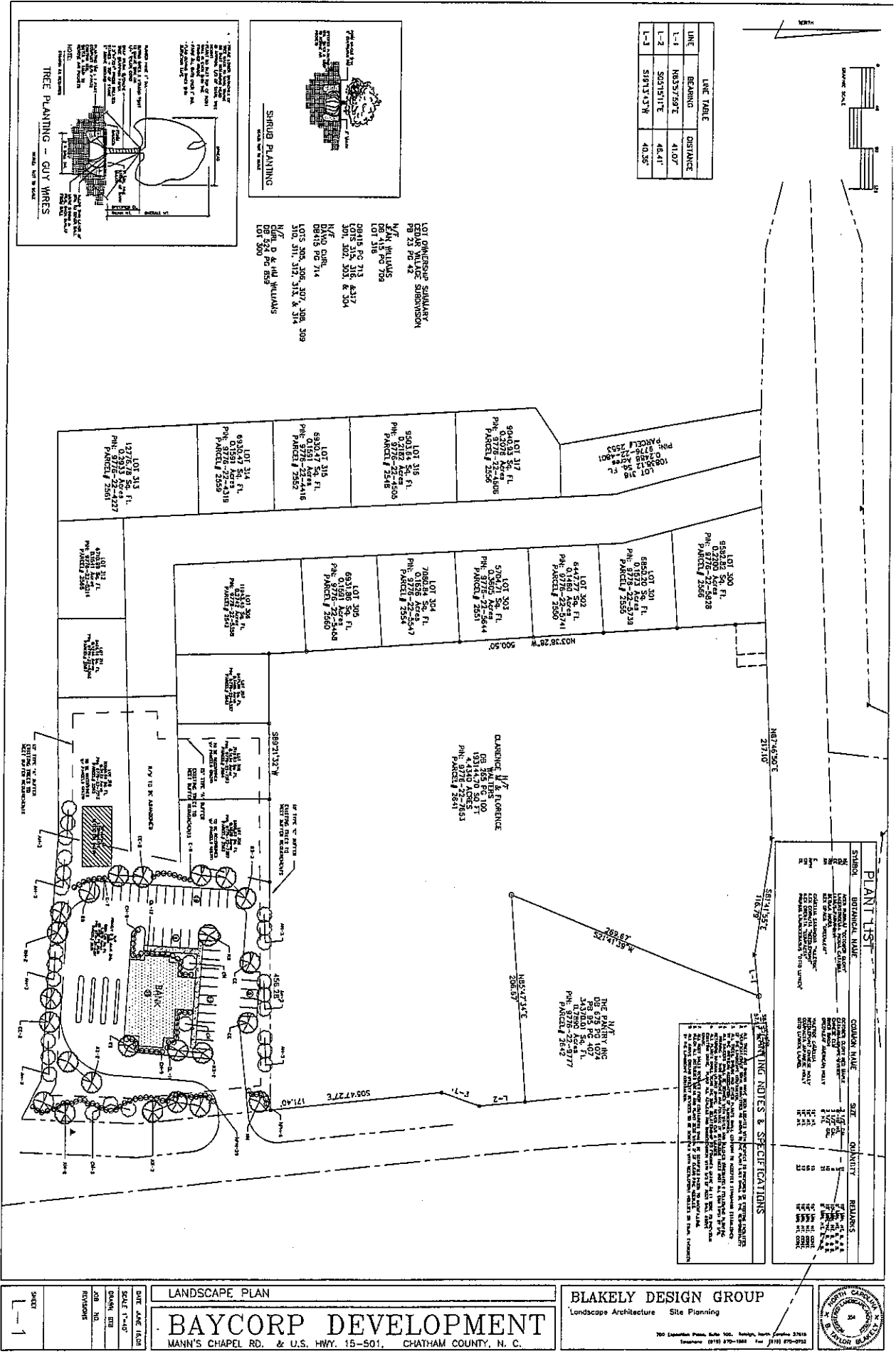
PRELIMINARY PLAN - NOT FOR CONSTRUCTION



	Piver & Associates, P.A. <i>Development Engineering</i> 1059 CREEDMOR ROAD, SUITE 200 RALEIGH, NORTH CAROLINA 27611 TELEPHONE: (919) 844-9960 FAX: (919) 844-9070		BAYCORP DEVELOPMENT PRELIMINARY SITE LAYOUT	NO	REVISION	DATE

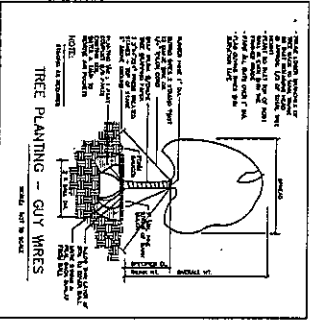
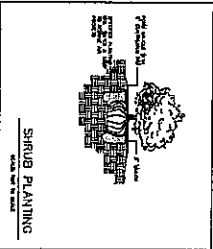
DATE: 06/10/06
 DRAWN: EAS
 SHEET: C0

EXHIBIT C



LINE TABLE

LINE	BEARING	DISTANCE
L-1	N83°57'59"E	41.07'
L-2	S01°11'11"E	48.41'
L-3	S19°13'43"W	40.35'



LOT OWNERSHIP SUMMARY
 500X N WILCOE SUBDIVISION
 PG 22 PG 24
 N/F WILLIAMS
 08 115 PG 759
 LOT 318
 08115 PG 718
 08115 PG 718 & 8317
 301, 302, 303, & 304
 N/F
 DAVID CURT
 08115 PG 714
 LOTS 300, 306, 307, 308, 309
 310, 311, 312, 313, & 314
 N/F
 D & H WILLIAMS
 08 192 PG 859
 LOT 300

PLANT LIST

SPECIES	BOTANICAL NAME	COLOR NAME	SIZE	QUANTITY	REMARKS
...

NOTES & SPECIFICATIONS

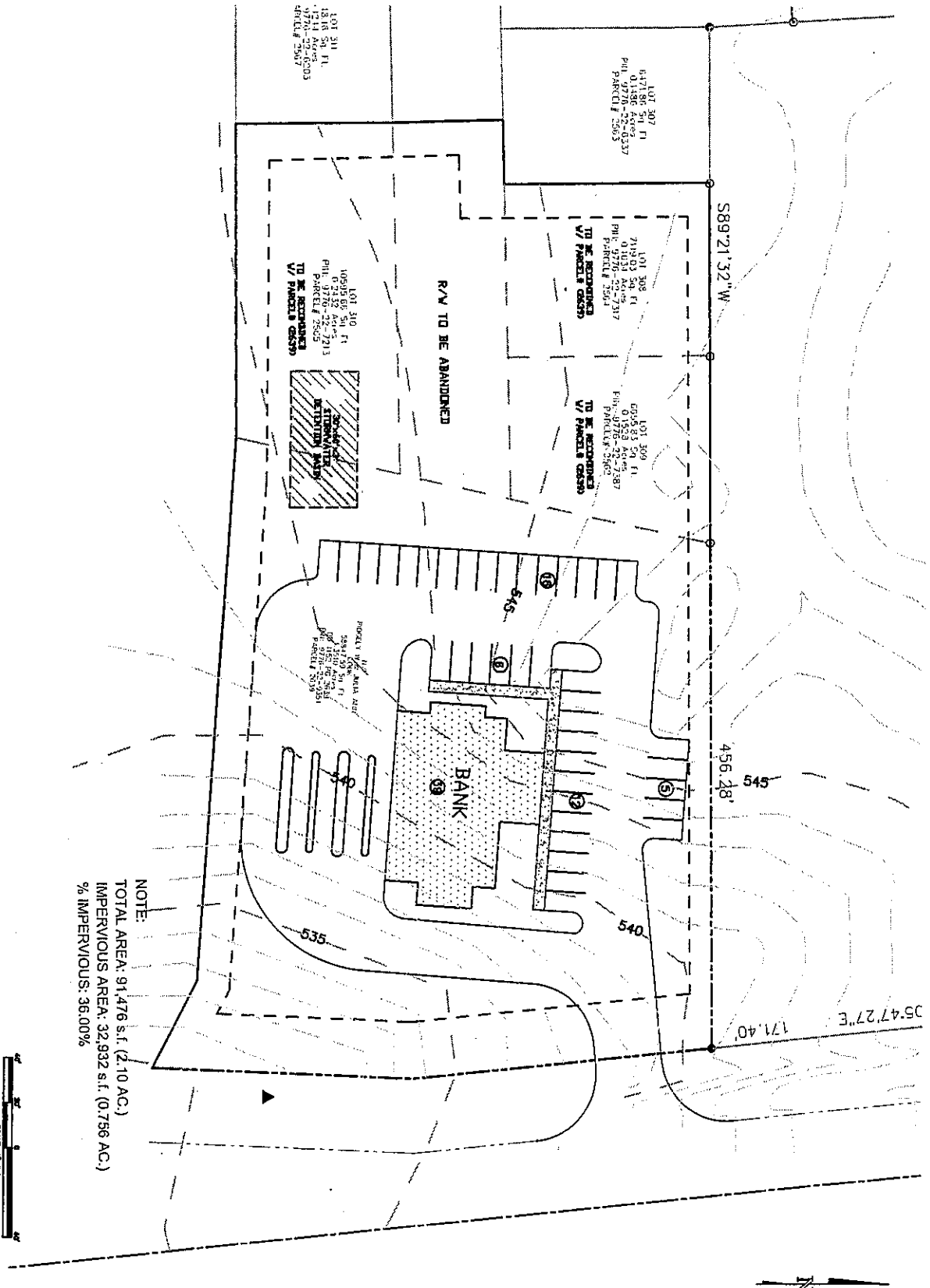
1. ALL PLANTING SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE NATIONAL LANDSCAPE ARCHITECTURE ASSOCIATION (NLA) AND THE NATIONAL FLORICULTURAL SOCIETY (NFS).

2. ALL PLANTING SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE NATIONAL LANDSCAPE ARCHITECTURE ASSOCIATION (NLA) AND THE NATIONAL FLORICULTURAL SOCIETY (NFS).

<p>DATE: 11-14-07 SCALE: 1"=40' DRAWN: EDB CHECK: JDC REVISIONS:</p>	<p>LANDSCAPE PLAN</p> <p>BAYCORP DEVELOPMENT</p> <p>WANN'S CHAPEL RD. & U.S. HWY. 15-501, CHATHAM COUNTY, N. C.</p>	<p>BLAKELY DESIGN GROUP</p> <p>Landscape Architecture Site Planning</p> <p>700 Expedition Plaza, Suite 100, Raleigh, North Carolina 27610 Telephone: (919) 876-1881 Fax: (919) 876-1882</p>	
--	--	---	--

SURVEY DATA PROVIDED BY - STALLINGS SURVEYING WAKE FOREST, NC

PRELIMINARY PLAN - NOT FOR CONSTRUCTION



NOTE:
 TOTAL AREA: 91,476 s.f. (2.10 AC.)
 IMPERVIOUS AREA: 32,932 s.f. (0.756 AC.)
 % IMPERVIOUS: 36.00%



	Piper & Associates, P.A. <i>Development Engineering</i> 3000 CREEKNOR ROAD, SUITE 200 RALEIGH, NORTH CAROLINA 27613 TELEPHONE: (919) 844-9600 FAX: (919) 844-9070		BAYCORP DEVELOPMENT PRELIMINARY SITE LAYOUT		NO.	REVISION	DATE

Chatham County Map

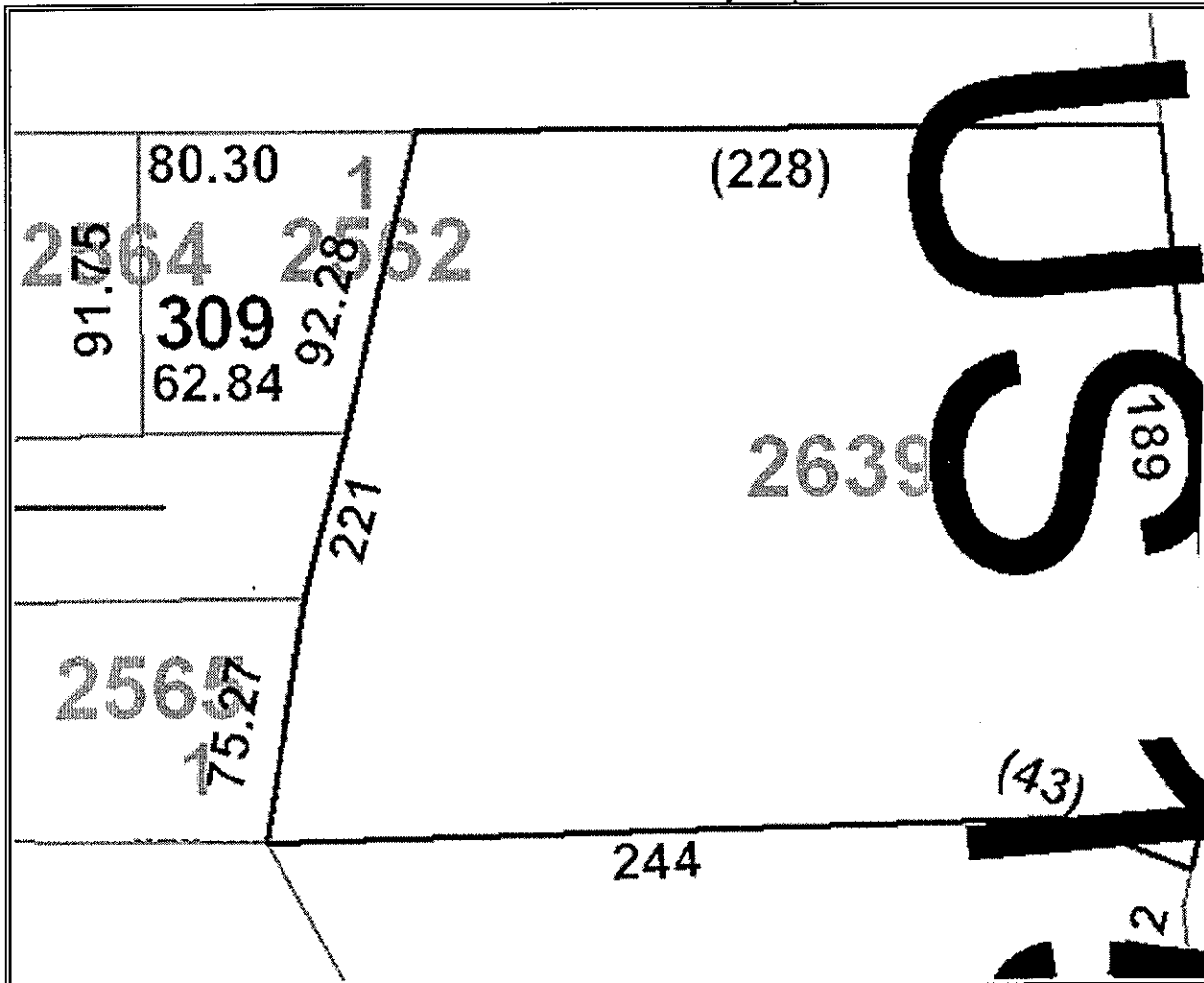


EXHIBIT F

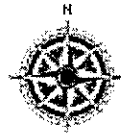
PIN	9776-22-9351.000	Property Rec Card	M1-77
Parcel Number(AKPAR)	2639	Feature	PARCEL-MATCH
Tax Year	2006	Township	2
Fire District	107	OwnerID	1241215
Deed Name	COOK RIDGELY W JR ETUX JULIA ANN	Deed Book	1152
Deed Page	0283	Deed Year	2005
Plat Book		Plat Page	
Legal Descrip	M1-77	Land FMV	55050
Improvement FMV	3624	Deeded Acres	1.67
Physical Address	11311 US 15 501 N	PIN Map	9776
PIN Submap	03	PIN Map Block	22
PIN Parcel	8260	PIN Subparcel	
Billing Name	COOK RIDGELY W JR	Billing Name2	COOPER JULIA ANN
Billing Name3		Billing Address	126 ESTES DR EXT
Billing Address2		Billing Address3	
Billing Address4		Billing City	CARRBORO
Billing State	NC	Billing Zip	27510
Watershed	WS-IV PA	Census Tract	020100

Disclaimer: This map is prepared for the inventory of real property found within this jurisdiction and is compiled from recorded deeds, plats, and other public records and data. Users of this

Map Scale
1 inch = 66 feet

map are hereby notified that the aforementioned public primary information sources should be consulted for verification of the information contained on this map. The County and the mapping companies assume no legal responsibilities for the information contained on this map.

Grid based on the North Carolina State Plane Coordinate System, 1983 North American Datum.





STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

LYNDO TIPPETT
SECRETARY

CHATHAM COUNTY COMMERCIAL DRIVEWAY REVIEW

I, Jessie E. Knight, have reviewed the location of a proposed Driveway entrance on US 15-501 at the existing antique store for the purposed Bay Corp Development bank site.

This site is acceptable for this use and a Driveway Permit shall be issued upon our receiving the request for a Driveway Permit and our reviewing the application for conformity to our specifications.

Signed this 14th day of June, 2006

Signature

Jessie E. Knight

TT IV

Title

Cc: Ms. Lynn Richardson, Chatham County Planner
Mr. Bill Piver

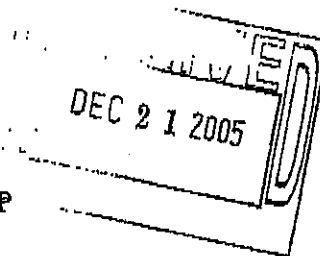
EXHIBIT G



EXHIBIT H

December 16, 2005

Mr. Ricky Pontello
Soil and Environmental Consultants
11010 Raven Ridge Road
Raleigh, NC 27614



Subject: Alternative Analysis
Cole Park Plaza WWTP, Cedar Village WWTP
Chatham County

Dear Mr. Pontello:

A private contractor recently purchased a vacant gas station on 15-501 north of Pittsboro and employed you to evaluate various routes of wastewater treatment. This piece of property is located between the Cole Park Plaza and Cedar Village WWTPs. The current plan is to tie the revamped gas station (complete with a Quizno's restaurant) to Cole Park Plaza which currently has ample flow to spare. Projected flows for the new gas station appear to be in the range of 1,000 - 1,500 gpd. The contractor, however, wants an alternative plan in case Cole Park Plaza is suddenly unable to accommodate the flow request.

As part of an earlier conversation on December 16, 2005, the Division of Water Quality would consider endorsing the purchasing of approximately 10 lots in Cedar Village; or in essence, purchasing the flow of 10 lots in Cedar Village. The contractor would discharge at a rate equivalent to that of the purchased lots, and either tear down the existing buildings or leave them vacant. The Division would consider approving the flow allocation with additional information. The Division would require a flow analysis of Cedar Village. It would also require documentation stating that Cedar Village would have adequate flow capacity if the lots were removed. In addition, any construction work (including piping) that would tie into Cedar Village WWTP would need to be approved by the Division through an Authorization to Construct (AtoC). If all information is provided and meets provided standards then the Division would consider authorizing the project.

If you have any questions or comments, please contact Christopher Wu at (919) 791-4260 [email: Chris.Wu@ncmail.net].

Sincerely,

Christopher Wu
Environmental Specialist

Cc: Chris Wu - RRO
Central Files

For North Carolina
Naturally

June 19, 2006

BayCorp Development
c/o Bill Piver, P.E.
Piver and Associates, P.A.
8009 Creedmoor Road, Suite 200
Raleigh, North Carolina 27613

Subject: Traffic Assessment
Proposed Drive-In Bank – US 15-501 South of Mann’s Chapel Road

Dear Mr. Piver:

This letter summarizes a traffic assessment prepared by Ramey Kemp & Associates, Inc. (RKA) for a proposed drive-in bank located on US 15-501 south of Mann’s Chapel Road and adjacent to and south of a future commercial property in the southwest quadrant of the intersection. This study considers the site will be developed with a drive-in bank. A traffic assessment (TA) was prepared by RKA in August 2005 for the redevelopment of the adjacent property in the southwest quadrant of the intersection to include a convenience market with 20 fueling positions, a carwash, and a 4,000 square foot (SF) bank. The southwest quadrant currently includes a convenience market with ten (10) fueling positions. It is our understanding that the bank will now be developed on the adjacent property to the south of the future commercial lot and the remaining lot in the southwest quadrant will be developed with a commercial use (fast-food restaurant assumed for this study).

The purpose of this study is to determine impacts to the signalized intersection of Manns Chapel Road and US 15-501 and the site driveway intersection and to recommend improvements to mitigate these impacts. In order to accomplish this objective, this study analyzes existing (2006) traffic conditions, background (2007) traffic conditions with traffic from approved adjacent developments added without the site, and combined (2007) traffic conditions with the site in place during the weekday a.m. and p.m. peak hours. It is anticipated that the future developments described above will be completed by 2007.

Access to the property in the proposed bank site will be provided via one right-in/right-out driveway on US 15-501. This study does not consider cross-access between the adjacent properties. Access to the southwest quadrant is assumed to remain the same as in the previous TA and be provided via two driveway connections to Manns Chapel Road and one driveway connection to US 15-501. The western most driveway on Manns Chapel Road is proposed to provide full access to the site while the remaining driveway connections are proposed to restrict access to right turn movements only.

Existing Traffic Conditions

A smaller property in the southwest quadrant currently includes a convenience market with ten (10) fueling positions with one full access driveway connection to Manns Chapel Road and two full access connections to US 15-501. Traffic counts were conducted by RKA at the intersection of Manns Chapel Road and US 15-501 as well as the existing site driveways on June 16th, 2005. Traffic counts were completed in 15-minute intervals during the a.m. peak period (7:00 a.m. – 9:00 a.m.) and the p.m. peak period (4:30 p.m. – 6:30 p.m.). Due to the close proximity of the existing driveways to the intersection of Manns Chapel Road and US 15-501, the through traffic for the driveways were calculated using the volumes observed at the signalized intersection. As a result, the traffic volumes of the study intersections are balanced for both the a.m. and p.m. peak hour periods. To determine existing (2006) conditions, the traffic counts in 2005 were projected to the year 2006 using a 3% growth rate. Refer to Figure 2 for existing (2006) a.m. and p.m. peak hour traffic volumes.

**TABLE 1
 EXISTING (2006) PEAK HOUR CAPACITY ANALYSIS RESULTS**

INTERSECTION	APPROACH	LANE CONFIGURATION	AM PEAK HOUR LEVEL OF SERVICE		PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall	Approach	Overall
US 15-501 (NB/SB) And Manns Chapel Road (EB/WB) (Signalized)	NB SB EB WB	1 LT, 2 TH, 1 RT 1 LT, 2 TH, 1 RT 2 LT, 1 TH, 1 RT 2 LT, 1 TH-RT	B B C C	C	B B C C	B
Driveway #2 (NB) And Manns Chapel Road (EB/WB) (Unsignalized)	NB EB WB	1 LT-RT 1 TH, 1 TH-RT 1 LT-TH	B ² -- N/A	--	B ² -- A ¹	--
US 15-501 (NB/SB) And Driveway #3 (EB) (Unsignalized)	EB NB SB	1 LT-RT 1 LT, 2 TH 1 TH, 1 TH-RT	A ² -- A ¹	--	A ² -- N/A	--
US 15-501 (NB/SB) And Driveway #4 (EB) (Unsignalized)	EB NB SB	1 LT-RT 1 LT, 2 TH 1 TH, 1 TH-RT	B ² -- A ¹	--	C ² -- B ¹	--

N/A - Not Applicable, no traffic volumes recorded for this movement.

1. Level of Service for left-turn movement on major approach.
2. Level of service for minor approach.

Capacity analysis indicates that the signalized intersection of Manns Chapel Road and US 15-501 is expected to operate at an acceptable overall LOS C during the a.m. peak hour and an acceptable overall LOS B during the p.m. peak hour. All intersection approaches operate at an acceptable LOS C or better during peak hour conditions.

Analysis indicates that each of the minor street approaches of the site driveways on Manns Chapel Road and US 15-501 to operate at LOS C or better during the a.m. and p.m. peak hours under existing (2006) conditions. Analysis also indicates that at each of the site driveways, the left turn movement from US 15-501 or Manns Chapel Road into the site is expected to operate at a LOS C or better during the both the a.m. and p.m. peak hours.

Background (2007) Traffic Conditions

Existing peak hour traffic volumes were projected to the year 2007 at a rate of 3 percent to determine background (2007) traffic conditions without site traffic. Refer to Figure 3 for background (2007) a.m. and p.m. peak hour traffic volumes. Site trips from the approved Briar Chapel Development were considered to be included in the background (2007) traffic conditions calculated using the 3% growth rate. This assumption was made considering that the Briar Chapel Development is currently under construction and is not expected to be fully built out until 2014. It should be noted that the annual growth rate was not applied to the trips generated by the existing development since these volumes were considered to be dependant on the size of the development and not on the future development of the area.

Capacity analysis indicates that the signalized intersection of Manns Chapel Road and US 15-501 is expected to continue to operate at an acceptable overall LOS C during the a.m. peak hour and an acceptable overall LOS B during the p.m. peak hour. In addition, it is expected that all intersection approaches will continue to operate at an acceptable LOS C or better during peak hour conditions.

Analysis also indicates that each of the minor street approaches of the commercial driveways on Manns Chapel Road and US 15-501 are expected to continue to operate at LOS C or better during the a.m. and p.m. peak hours under existing (2006) conditions. Capacity analysis indicates that at each of the driveways, the left turn movement from US 15-501 or Manns Chapel Road into the commercial lot is expected to operate at a LOS B or better during the both the a.m. and p.m. peak hours.

TABLE 2
BACKGROUND (2007) PEAK HOUR CAPACITY ANALYSIS RESULTS

INTERSECTION	A P P R O A C H	LANE CONFIGURATION	AM PEAK HOUR LEVEL OF SERVICE		PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall	Approach	Overall
US 15-501 (NB/SB) And Manns Chapel Road (EB/WB) (Signalized)	NB SB EB WB	1 LT, 2 TH, 1 RT 1 LT, 2 TH, 1 RT 2 LT, 1 TH, 1 RT 2 LT, 1 TH-RT	B B C C	C	B B C C	C
Driveway #2 (NB) And Manns Chapel Road (EB/WB) (Unsignalized)	NB EB WB	1 LT-RT 1 TH, 1 TH-RT 1 LT-TH	B ² -- A ¹	--	B ² -- A ¹	--
US 15-501 (NB/SB) And Driveway #3 (EB) (Unsignalized)	EB NB SB	1 LT-RT 1 LT, 2 TH 1 TH, 1 TH-RT	A ² -- N/A	--	A ² -- N/A	--
US 15-501 (NB/SB) And Driveway #4 (EB) (Unsignalized)	EB NB SB	1 LT-RT 1 LT, 2 TH 1 TH, 1 TH-RT	B ² -- A ¹	--	C ² -- B ¹	--

N/A - Not Applicable, no traffic volumes recorded for this movement.

1. Level of Service for left-turn movement on major approach.
2. Level of service for minor approach.

Trip Generation

Trips generation was completed for the future commercial development in the southwest quadrant as well as for the proposed bank site. It is anticipated that the commercial development in the southwest quadrant will be developed with a gas station/convenience market as well as a fast-food restaurant with drive-thru. The bank site is assumed to be developed with a drive-in bank. The trip generation for both sites were calculated utilizing methodology contained within the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 7th Edition.

At full build out of the development, it is estimated that the future southwest quadrant development will generate approximately 12,340 total site trips (6,170 enter and 6,170 exit) during an average 24-hour weekday period. It is estimated that the bank site will generate approximately 986 total site trips (493 enter and 493 exit) during an average 24-hour weekday period. However, not all of these trips will impact the adjacent roadway network. A portion of these trips will exist as pass-by trips. Refer to Table 3 for a detailed breakdown of the southwest quadrant site trips and bank site trips.

The *ITE Trip Generation Handbook* defines pass-by trips as intermediate stops on the way from an origin to a primary trip destination. Pass-by trips are attracted from the traffic passing the site on an adjacent street, when the adjacent street provides direct access to the generator. An example of a pass-by trip is a stop at the proposed development for a vehicle on the way home from work. These trips will not add to the overall traffic volumes on the roadway, but will add to the turning traffic at the site's driveway connections. The *ITE Trip Generation Handbook* contains the pass-by trip rates for the proposed land uses during the a.m. and p.m. peak hour traffic conditions. Pass-by rates of 63% and 66% were applied to the traffic generated by the convenience market during the a.m. peak hour and p.m. peak hour, respectively. Pass-by rates of 49% and 50% were applied to fast-food restaurant trips during the a.m. peak hour and p.m. peak hour, respectively. A pass-by trip rate of 47% was applied to the traffic generated by the bank during the p.m. peak hour.

With adjustments made to account for pass-by trips, the southwest quadrant development is expected to generate 4,774 trips new per day and 208 primary trips (106 entering and 103 exiting) during the a.m. peak hour and 183 primary trips (93 entering and 89 exiting) during the p.m. peak hour. The bank site is expected to generate 754 new trips per day and 49 primary trips (27 entering and 22 exiting) during the a.m. peak hour and 97 primary trips (49 entering and 49 exiting) during the p.m. peak hour. Refer to Table 3 for a summary of the trip generation calculations for the future developments.

Trip Distribution

Separate primary site trip distribution percentages were determined for both the southwest quadrant development and the bank based on existing traffic patterns exhibited at the existing site driveways and engineering judgment. In general, approximately 50% of primary trips will travel to/from the north on US 15-501 while approximately 25% will travel to/from the south. Approximately 20% of primary trips will travel to/from the west on Mann's Chapel Road while the remaining 5% will travel to/from the east on Mann's Chapel Road.

Separate pass-by trip distribution percentages were also determined for the southwest quadrant development and the bank site. The pass-by site trip distribution was determined based on the peak hour traffic patterns.

It should be noted that site trips do not enter and exit the developments via the same driveways due to restrictions placed on turning movements at some driveways. Primary trips and pass-by trips for each development were added to determine total peak hour trips generated by the future developments. Refer to Figure 4 for the total peak hour site trips.

Table 3
Trip Generation

Development/Land Use	Size	Units	Weekday Daily			AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	In	Out	Total	In	Out	Total
SOUTHWEST QUADRANT											
Convenience Market with Gas Pumps (853)	20	Fuel Pos.	5,426	5,426	10,852	172	172	343	192	192	384
Fast Food Restaurant with Drive-Thru (853)	3,000	s.f.	744	744	1,488	81	78	159	54	50	104
Pass-By - Convenience Market (AM/PM)	63%	66%	3,418	3,418	6,837	108	108	217	127	127	253
Pass-By - Fast-Food Restaurant	49%	50%	365	365	729	39	39	78	26	26	52
Total Primary Trips			2,387	2,387	4,774	106	103	208	93	89	183
BANK SITE											
Drive-In Bank (912)	4,000	SF	493	493	986	27	22	49	92	92	183
Pass-By Trips - Bank (PM only)		47%	116	116	232	0	0	0	43	43	86
Total Primary Trips			377	377	754	27	22	49	49	49	97
Total Pass-By Trips			3,899	3,899	7,798	147	147	295	196	196	392
Total Primary (New) Trips			2,764	2,764	5,528	133	125	257	142	138	279

(1) Based on ITE Trip Generation - 7th Edition

Combined (2007) Traffic Conditions

Total peak hour site trips were added to background (2007) traffic volumes to determine combined (2007) traffic conditions. It should be noted that the trips generated by the existing development were removed before the trips expected to be generated by the proposed development were added to the roadway network. Refer to Figure 5 for combined (2007) a.m. and p.m. peak hour traffic volumes. Combined (2007) a.m. and p.m. peak hour traffic volumes at the study intersections were analyzed using Synchro 5.0, which is based on methodologies and procedures in the 2000 Highway Capacity Manual. Capacity analysis results are presented for combined a.m. and p.m. peak hour traffic conditions in Table 4.

Capacity analysis indicates that the signalized intersection of Manns Chapel Road and US 15-501 is expected to operate at an acceptable overall LOS C during both the a.m. and p.m. peak hour. All intersection approaches operate at an acceptable LOS D or better during peak hour conditions.

Analysis indicates that the minor street approaches of the two southwest quadrant development driveways on Mann's Chapel Road are expected to operate at LOS C or better during the a.m. and p.m. peak hours under combined (2007) conditions. At Driveway #1, the left turn movement from Manns Chapel Road into the site is expected to operate at a LOS A during the both the a.m. and p.m. peak hours. The minor street approach of Driveway #4 at the southwest quadrant development is expected to operate at LOS A during the a.m. peak hour and LOS B during the p.m. peak hour.

The Site Driveway #5 approach for the bank site is expected to operate at LOS A during the a.m. peak hour and LOS B during the p.m. peak hour under combined (2007) conditions as a right-in/right-out driveway.

It should be noted that the signalized intersection of Manns Chapel Road and US 15-501 was analyzed with the existing lane configuration and traffic control under future traffic conditions. The Briar Chapel Development is expected to construct geometric and traffic control improvements at this intersection. However, these improvements are to be installed as the Briar Chapel Development is built out. The first improvement called for to be made to the intersection is the extension of the eastbound dual left-turn lanes on Manns Chapel Road to provide 500 ft of full width storage. This improvement is to be triggered when Briar Chapel is 25% developed. It is not anticipated that the Briar Chapel development will be 25% built out by the study year of 2007.

TABLE 4
COMBINED (2007) PEAK HOUR CAPACITY ANALYSIS RESULTS

INTERSECTION	APPROACH	LANE CONFIGURATION	AM PEAK HOUR LEVEL OF SERVICE		PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall	Approach	Overall
US 15-501 (NB/SB) And Manns Chapel Road (EB/WB) (Signalized)	NB SB EB WB	1 LT, 2 TH, 1 RT 1 LT, 2 TH, 1 RT 2 LT, 1 TH, 1 RT 2 LT, 1 TH-RT	C B C C	C	B C D D	C
Drive #1 (NB) And Manns Chapel Road (EB/WB) (SW Quadrant)	NB EB WB	1 LT, 1 RT 1 TH, 1 RT* 1 LT-TH	C ² -- A ¹	--	C ² -- A ¹	--
Drive #2 (NB) And Manns Chapel Road (EB/WB) (SW Quadrant)	NB EB WB	1 RT 1 TH, 1 TH-RT 1 TH	B ² -- --	--	A ² -- --	--
US 15-501 (NB/SB) And Drive #4 (EB) (SW Quadrant)	NB SB EB	2 TH 2 TH, 1 RT 1 RT	-- -- A ²	--	-- -- B ²	--
US 15-501 (NB/SB) And Site Driveway #5 (EB) (Bank Site)	NB SB EB	2 TH 2 TH, 1 RT 1 RT	-- -- A ²	--	-- -- B ²	--

Bold type denotes geometric improvements and/or revised lane configuration.

* The turn lane has a length of Bay taper and no full width storage.

N/A - Not Applicable, no traffic volumes recorded for this movement.

1. Level of Service for left-turn movement on major approach.

2. Level of service for minor approach.

Conclusions and Recommendations

This study was performed to determine the traffic impacts of developing a drive-in bank on a property located south of a future commercial development in the southwest quadrant of the US 15-501/Mann's Chapel Road intersection. This study assumes the future development in the southwest quadrant will be developed with a convenience market with 20 fueling positions, a carwash, and a fast-food restaurant. This development is expected to have access on Mann's Chapel Road and a right-in/right-out driveway on US 15-501. The bank site adjacent to the south will include a drive-in bank with access proposed via one right-in/right-out driveway on US 15-501.

Mr. Bill Piver
June 19, 2006
Page 9

The proposed Briar Chapel Development is expected to be completed by 2014, but is not expected to significantly impact the study area by the proposed build out year of 2007.

Analysis was completed for combined (2007) traffic conditions to ensure that the existing lane configurations and traffic control in the study area are sufficient to mitigate impacts from the development in the year 2007. Therefore, any improvements made to the adjacent roadways by the Briar Chapel Development are expected to be adequate for the years following the full build out of the developments.

Capacity analysis indicates that the signalized intersection of Manns Chapel Road and US 15-501 is expected to operate at an acceptable overall LOS C during both the a.m. and p.m. peak hour whether or not the two commercial sites are developed. In addition, all intersection approaches operate at an acceptable LOS D or better during peak hour conditions.

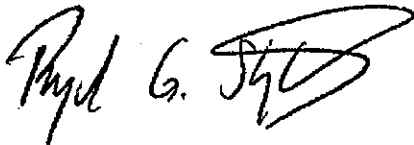
Analysis of combined (2007) conditions indicates that all approaches and movements at the driveway intersections on Manns Chapel Road and the driveway intersection on US 15-501 are expected to operate at acceptable levels of service during the a.m. and p.m. peak hours. The proposed right-in/right-out driveway (Site Drive #5) for the bank is expected to operate at LOS B or better under combined conditions.

Based on analysis, geometric and traffic control improvements are not recommended at the study intersection of Manns Chapel Road and US 15-501. Turn lane improvements were recommended at the driveways for the southwest quadrant development and are discussed in the previous TA.

Due to the heavy traffic volumes expected on US 15-501 in the future, it is recommended to provide a right-turn lane on US 15-501 at the bank driveway.

If you should have any questions, or comments, please free to contact me at (919) 872-5115.

Sincerely,
Ramey Kemp and Associates, Inc.

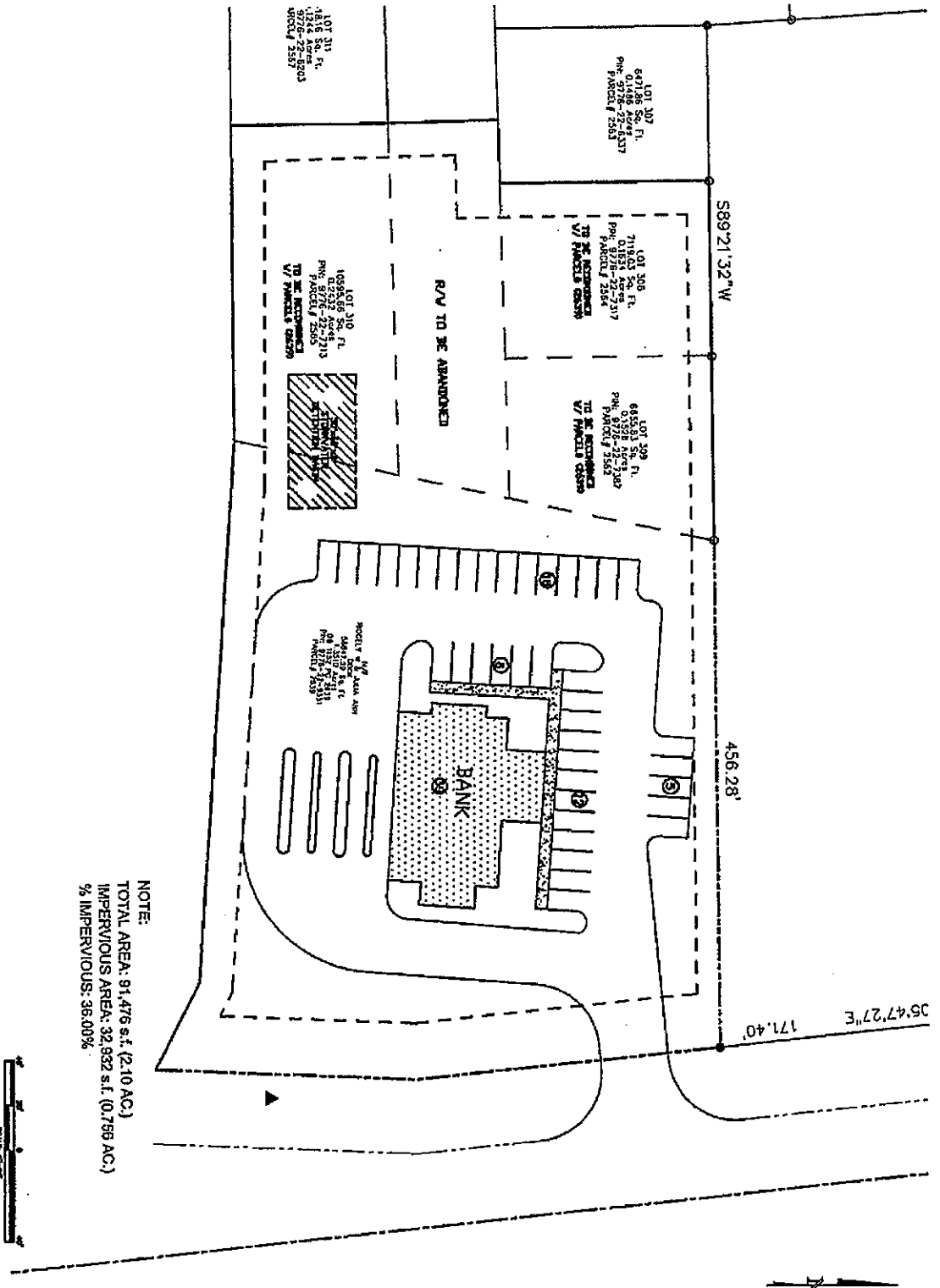


Rynal G. Stephenson, P.E.
Traffic Engineer

Attachments

SURVEY DATA PROVIDED BY - STALLINGS SURVEYING WAKE FOREST, NC

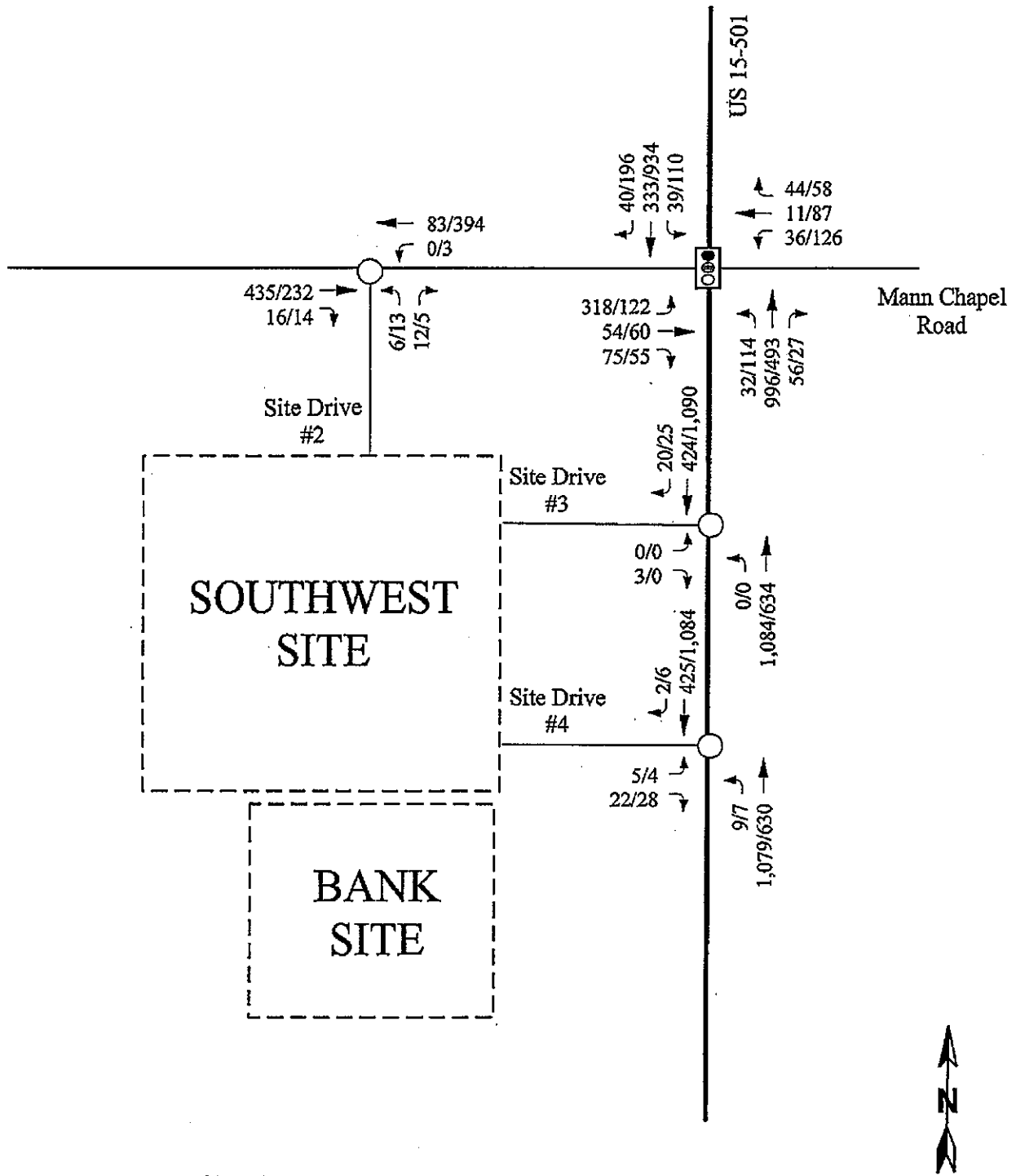
PRELIMINARY PLAN - NOT FOR CONSTRUCTION



NOTE:
 TOTAL AREA: 91,476 s.f. (2.10 AC.)
 IMPERVIOUS AREA: 32,932 s.f. (0.759 AC.)
 % IMPERVIOUS: 36.00%



	Piver & Associates, P.A. <i>Development Engineering</i> 100 CREEDMOOR ROAD, SUITE 200 RALEIGH, NORTH CAROLINA 27613 TELEPHONE: (919) 844-9000 FAX: (919) 844-9000		BAYCORP DEVELOPMENT PRELIMINARY SITE LAYOUT		NO. _____ REVISION _____ DATE _____
			DATE: _____ DRAWN BY: _____ CHECKED: _____	C1	



LEGEND

XX/YY → AM/PM Peak Hour Traffic Volume

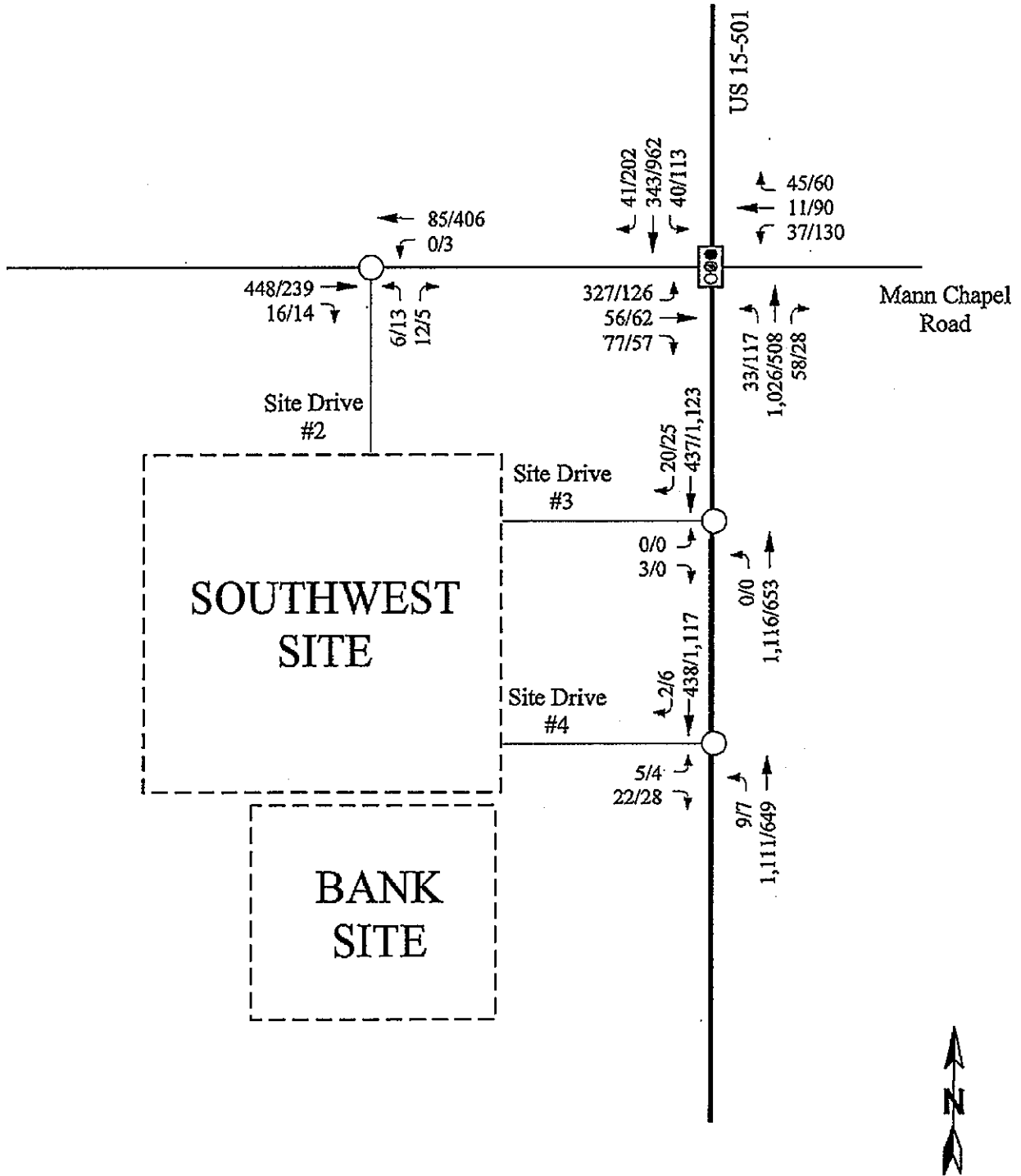


Signalized Intersection





Unsignalized Intersection

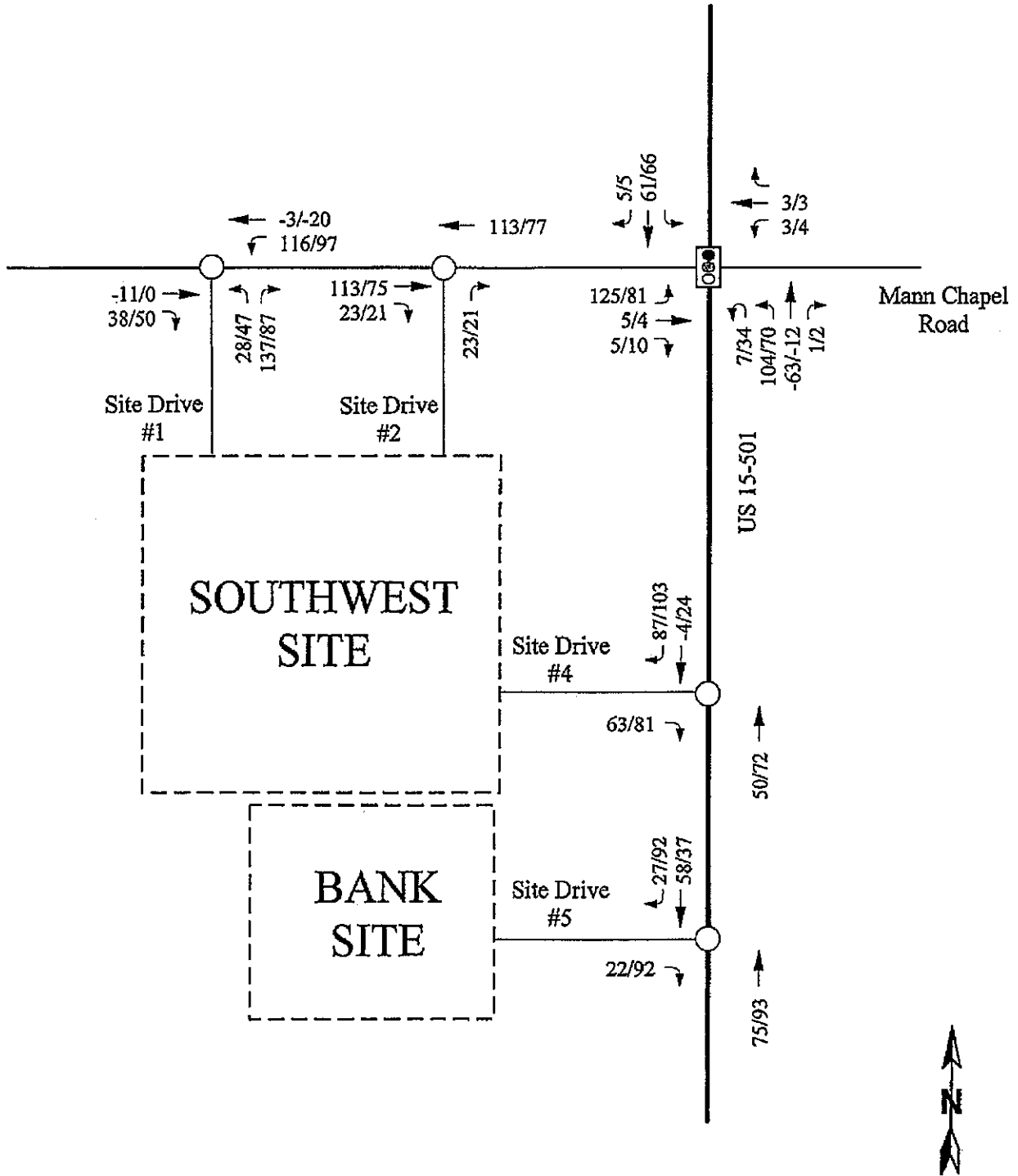
<p>MANN'S CHAPEL DEVELOPMENT CHATHAM COUNTY, NORTH CAROLINA</p>	
<p>Existing (2006) Peak Hour Traffic</p>	
<p>Scale: Not to Scale</p>	<p>Figure 2</p>





LEGEND

- XX/YY → AM/PM Peak Hour Traffic Volume
-  Signalized Intersection
-  Unsignalized Intersection

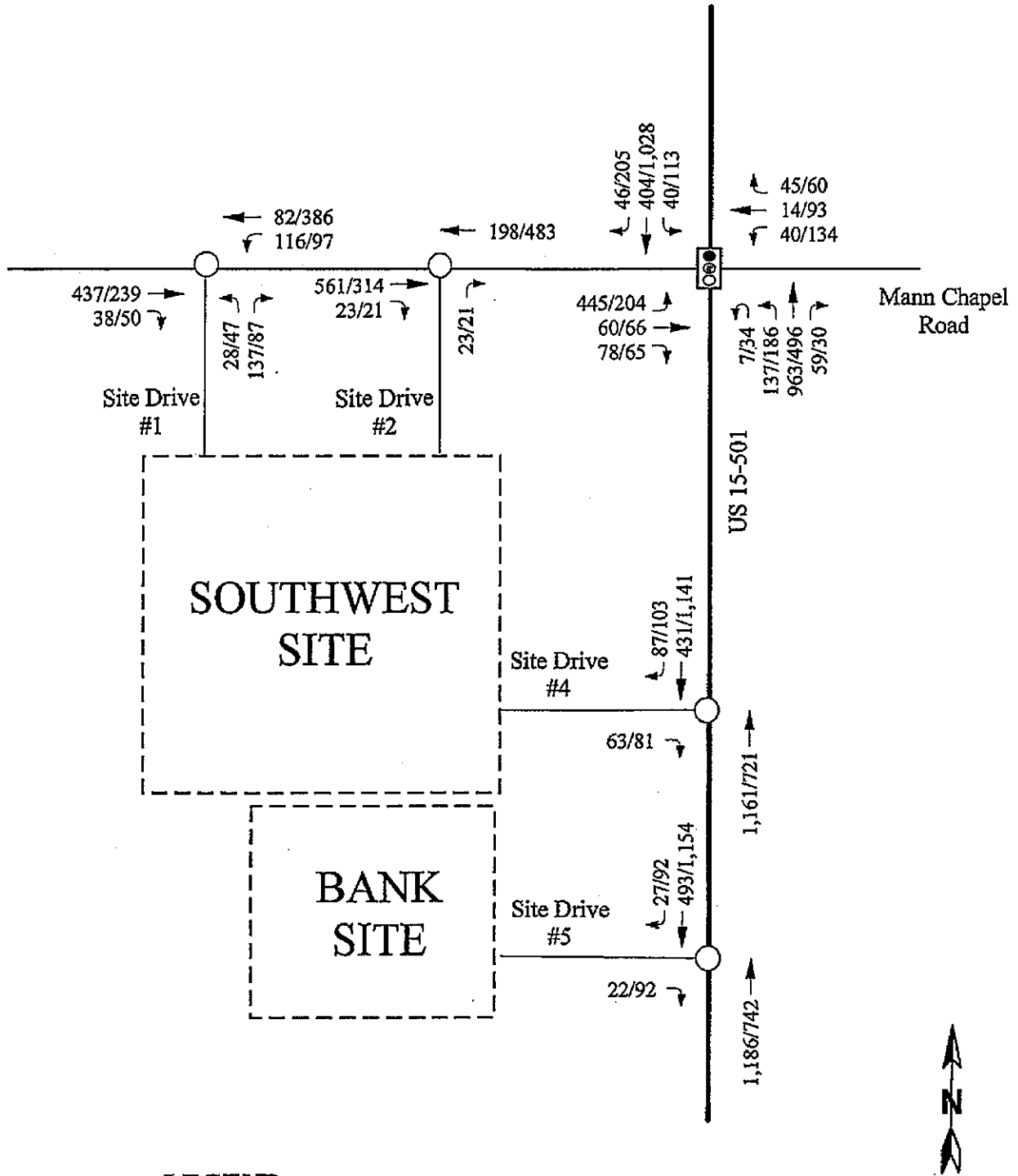
MANN'S CHAPEL DEVELOPMENT CHATHAM COUNTY, NORTH CAROLINA	
Background (2007) Peak Hour Traffic	
Scale: Not to Scale	Figure 3





LEGEND

- XX/YY → AM/PM Peak Hour Traffic Volume
-  Signalized Intersection
-  Unsignalized Intersection

<p>MANNS CHAPEL DEVELOPMENT CHATHAM COUNTY, NORTH CAROLINA</p>	
<p>Site Trip Assignment Southwest Site + Bank Site</p>	
<p>Scale: Not to Scale</p>	<p>Figure 4</p>



LEGEND

- XX/YY → AM/PM Peak Hour Traffic Volume
-  Signalized Intersection
-  Unsignalized Intersection

MANN'S CHAPEL DEVELOPMENT CHATHAM COUNTY, NORTH CAROLINA	
Combined (2007) Peak Hour Traffic	
Scale: Not to Scale	Figure 5

Lanes, Volumes, Timings
1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%			1%			-1%	
Storage Length (ft)	0		120	0		0	0		0	0		0
Storage Lanes	2		1	2		0	1		1	1		1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Leading Detector (ft)	50	50	50	50	50		50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frnt			0.850		0.880				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3416	1853	1575	3399	1623	0	1761	3522	1575	1778	3557	1591
Flt Permitted	0.950			0.950			0.487			0.140		
Satd. Flow (perm)	3416	1853	1575	3399	1623	0	903	3522	1575	262	3557	1591
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			83		49				56			44
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		258			1204			157			555	
Travel Time (s)		3.9			18.2			1.9			6.9	
Volume (vph)	318	54	75	36	11	44	32	996	56	39	333	40
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	353	60	83	40	12	49	36	1107	62	43	370	44
Lane Group Flow (vph)	353	60	83	40	61	0	36	1107	62	43	370	44
Turn Type	Split		pm+ov	Split			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	4	4	5	3	3		5	2	3	1	6	4
Permitted Phases			4				2		2	6		6
Detector Phases	4	4	5	3	3		5	2	3	1	6	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.2	14.2	14.2	14.2	14.2		14.2	19.2	14.2	14.2	19.2	14.2
Total Split (s)	45.0	45.0	25.0	45.0	45.0	0.0	25.0	120.0	45.0	25.0	120.0	45.0
Total Split (%)	19%	19%	11%	19%	19%	0%	11%	51%	19%	11%	51%	19%
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7		4.7	4.7	4.7	4.7	4.7	4.7
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	Min	None	None	Min	None
Act Effct Green (s)	15.3	15.3	28.4	10.3	10.3		36.8	33.0	47.9	35.6	29.5	49.5
Actuated g/C Ratio	0.20	0.20	0.35	0.13	0.13		0.46	0.42	0.60	0.43	0.38	0.64

Lanes, Volumes, Timings
1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.52	0.16	0.14	0.09	0.24		0.07	0.74	0.06	0.15	0.27	0.04
Uniform Delay, d1	29.8	27.6	0.0	33.5	6.6		8.9	20.8	0.8	9.2	17.1	0.0
Delay	33.2	33.7	6.1	40.2	17.4		9.8	20.8	3.2	10.5	18.1	1.2
LOS	C	C	A	D	B		A	C	A	B	B	A
Approach Delay		28.7			26.4			19.5			15.8	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	93	29	0	10	6		8	277	1	10	71	0
Queue Length 95th (ft)	163	73	34	30	50		25	403	19	28	115	5
Internal Link Dist (ft)		178			1124			77			475	
50th Up Block Time (%)								45%				
95th Up Block Time (%)								46%				
Turn Bay Length (ft)			120									
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)								502				

Intersection Summary

Area Type: Other

Cycle Length: 235

Actuated Cycle Length: 77.7

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 21.1

Intersection Capacity Utilization 55.7%

Intersection LOS: C

ICU Level of Service A

Splits and Phases: 1: Manns Chapel Road & US 15-501

25 s	120 s	45 s	45 s
25 s	120 s		












HCM Unsignalized Intersection Capacity Analysis
 3: Manns Chapel Road & Site Drive #2

Chatham County, NC

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↖	↗	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	435	16	0	83	6	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	483	18	0	92	7	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				258		
pX, platoon unblocked						
vC, conflicting volume			501		584	251
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			501		584	251
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	98
cM capacity (veh/h)			1059		442	749
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	322	179	92	20		
Volume Left	0	0	0	7		
Volume Right	0	18	0	13		
cSH	1700	1700	1059	608		
Volume to Capacity	0.19	0.11	0.00	0.03		
Queue Length (ft)	0	0	0	3		
Control Delay (s)	0.0	0.0	0.0	11.1		
Lane LOS				B		
Approach Delay (s)	0.0		0.0	11.1		
Approach LOS				B		
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			25.6%		ICU Level of Service	A













HCM Unsignalized Intersection Capacity Analysis
 4: Site Drive #3 & US 15-501

Chatham County, NC

							
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	3	0	1084	424	20	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (veh/h)	0	3	0	1204	471	22	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage (veh)							
Upstream signal (ft)					157		
pX, platoon unblocked	0.93	0.93	0.93				
vC, conflicting volume	1084	247	493				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1016	116	381				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	100	100				
cM capacity (veh/h)	218	851	1093				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	3	0	602	602	314	179
Volume Left	0	0	0	0	0	0	0
Volume Right	0	3	0	0	0	0	22
cSH	1700	851	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.35	0.35	0.18	0.11
Queue Length (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	9.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A					
Approach Delay (s)	9.2		0.0			0.0	
Approach LOS	A						
Intersection Summary							
Average Delay			0.0				
Intersection Capacity Utilization			37.5%	ICU Level of Service		A	

HCM Unsignalized Intersection Capacity Analysis
 5: Site Drive #4 & US 15-501

Chatham County, NC

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	22	9	1079	425	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	6	24	10	1199	472	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					307	
pX, platoon unblocked	0.94	0.94	0.94			
vC, conflicting volume	1093	237	474			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1030	115	369			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	97	99			
cM capacity (veh/h)	213	856	1110			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	30	10	599	599	315	160
Volume Left	6	10	0	0	0	0
Volume Right	24	0	0	0	0	2
cSH	549	1110	1700	1700	1700	1700
Volume to Capacity	0.05	0.01	0.35	0.35	0.19	0.09
Queue Length (ft)	4	1	0	0	0	0
Control Delay (s)	11.9	8.3	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	11.9	0.1			0.0	
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			44.8%			
ICU Level of Service						A

Lanes, Volumes, Timings
1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%			1%			-1%	
Storage Length (ft)	0		120	0		0	0		0	0		0
Storage Lanes	2		1	2		0	1		1	1		1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Leading Detector (ft)	50	50	50	50	50		50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frnt			0.850		0.940				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3416	1853	1575	3399	1733	0	1761	3522	1575	1778	3557	1591
Flt Permitted	0.950			0.950			0.162			0.378		
Satd. Flow (perm)	3416	1853	1575	3399	1733	0	300	3522	1575	708	3557	1591
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			61		12				30			198
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		258			1204			157			336	
Travel Time (s)		3.9			18.2			1.9			4.2	
Volume (vph)	122	60	55	126	87	58	114	493	27	110	934	196
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	136	67	61	140	97	64	127	548	30	122	1038	218
Lane Group Flow (vph)	136	67	61	140	161	0	127	548	30	122	1038	218
Turn Type	Split		pm+ov	Split			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	4	4	5	3	3		5	2	3	1	6	4
Permitted Phases			4				2		2	6		6
Detector Phases	4	4	5	3	3		5	2	3	1	6	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.2	14.2	14.2	14.2	14.2		14.2	19.2	14.2	14.2	19.2	14.2
Total Split (s)	45.0	45.0	25.0	45.0	45.0	0.0	25.0	120.0	45.0	25.0	120.0	45.0
Total Split (%)	19%	19%	11%	19%	19%	0%	11%	51%	19%	11%	51%	19%
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7		4.7	4.7	4.7	4.7	4.7	4.7
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	Min	None	None	Min	None
Act Effct Green (s)	10.7	10.7	24.2	14.3	14.3		56.6	49.0	65.1	56.5	48.9	58.0
Actuated g/C Ratio	0.11	0.11	0.24	0.14	0.14		0.57	0.51	0.65	0.57	0.51	0.60

Lanes, Volumes, Timings

1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.37	0.34	0.14	0.29	0.62		0.39	0.31	0.03	0.24	0.58	0.21
Uniform Delay, d1	42.5	42.3	0.0	39.2	38.0		7.7	15.6	0.0	7.6	18.6	0.4
Delay	36.8	39.0	8.0	32.4	32.0		9.9	18.0	2.6	9.8	21.4	1.3
LOS	D	D	A	C	C		A	B	A	A	C	A
Approach Delay		30.7			32.2			15.9			17.2	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	34	32	0	32	71		29	106	0	28	242	2
Queue Length 95th (ft)	80	92	34	75	169		72	191	10	70	409	15
Internal Link Dist (ft)		178			1124			77			256	
50th Up Block Time (%)								21%			1%	
95th Up Block Time (%)							3%	36%			23%	
Turn Bay Length (ft)			120									
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)								154				

Intersection Summary

Area Type: Other

Cycle Length: 235

Actuated Cycle Length: 96.8

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 19.9

Intersection Capacity Utilization 67.2%

Intersection LOS: B

ICU Level of Service B

Splits and Phases: 1: Manns Chapel Road & US 15-501

25 s	120 s	45 s	45 s
25 s	120 s		












HCM Unsignalized Intersection Capacity Analysis
 3: Manns Chapel Road & Site Drive #2

Chatham County, NC

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↖	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	232	14	3	394	13	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	258	16	3	438	14	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				258		
pX, platoon unblocked					0.93	
vC, conflicting volume			273		710	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			273		689	137
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	99
cM capacity (veh/h)			1287		353	887
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	172	101	441	20		
Volume Left	0	0	3	14		
Volume Right	0	16	0	6		
cSH	1700	1700	1287	424		
Volume to Capacity	0.10	0.06	0.00	0.05		
Queue Length (ft)	0	0	0	4		
Control Delay (s)	0.0	0.0	0.1	13.9		
Lane LOS			A	B		
Approach Delay (s)	0.0		0.1	13.9		
Approach LOS				B		
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			36.1%		ICU Level of Service	A











HCM Unsignalized Intersection Capacity Analysis
 4: Site Drive #3 & US 15-501

Chatham County, NC

							
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	0	0	634	1090	25	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (veh/h)	0	0	0	704	1211	28	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage (veh)							
Upstream signal (ft)					157		
pX, platoon unblocked	0.79	0.79	0.79				
vC, conflicting volume	1577	619	1239				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1462	244	1032				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	100	100				
cM capacity (veh/h)	94	595	526				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	0	352	352	807	431
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	28
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.21	0.21	0.47	0.25
Queue Length (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A					
Approach Delay (s)	0.0		0.0			0.0	
Approach LOS	A						
Intersection Summary							
Average Delay			0.0				
Intersection Capacity Utilization			38.5%		ICU Level of Service		A

HCM Unsignalized Intersection Capacity Analysis
 5: Site Drive #4 & US 15-501

Chatham County, NC

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	4	28	7	630	1084	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	4	31	8	700	1204	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					307	
pX, platoon unblocked	0.79	0.79	0.79			
vC, conflicting volume	1573	606	1211			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1458	227	997			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	95	99			
cM capacity (veh/h)	93	610	543			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	36	8	350	350	803	408
Volume Left	4	8	0	0	0	0
Volume Right	31	0	0	0	0	7
cSH	360	543	1700	1700	1700	1700
Volume to Capacity	0.10	0.01	0.21	0.21	0.47	0.24
Queue Length (ft)	8	1	0	0	0	0
Control Delay (s)	16.1	11.7	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	16.1	0.1			0.0	
Approach LOS	C					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			45.2%			
ICU Level of Service						A

Lanes, Volumes, Timings
1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%			1%			-1%	
Storage Length (ft)	0		120	0		0	0		0	0		0
Storage Lanes	2		1	2		0	1		1	1		1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Leading Detector (ft)	50	50	50	50	50		50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850		0.879				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3416	1853	1575	3399	1621	0	1761	3522	1575	1778	3557	1591
Flt Permitted	0.950			0.950			0.480			0.130		
Satd. Flow (perm)	3416	1853	1575	3399	1621	0	890	3522	1575	243	3557	1591
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			86		50				56			46
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		258			1204			157			336	
Travel Time (s)		3.9			18.2			1.9			4.2	
Volume (vph)	327	56	77	37	11	45	33	1026	58	40	343	41
Confl. Peds. (##/hr)												
Confl. Bikes (##/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (##/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (##/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	363	62	86	41	12	50	37	1140	64	44	381	46
Lane Group Flow (vph)	363	62	86	41	62	0	37	1140	64	44	381	46
Turn Type	Split		pm+ov	Split			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	4	4	5	3	3		5	2	3	1	6	4
Permitted Phases			4				2		2	6		6
Detector Phases	4	4	5	3	3		5	2	3	1	6	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.2	14.2	14.2	14.2	14.2		14.2	19.2	14.2	14.2	19.2	14.2
Total Split (s)	45.0	45.0	25.0	45.0	45.0	0.0	25.0	120.0	45.0	25.0	120.0	45.0
Total Split (%)	19%	19%	11%	19%	19%	0%	11%	51%	19%	11%	51%	19%
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7		4.7	4.7	4.7	4.7	4.7	4.7
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	Min	None	None	Min	None
Act Effct Green (s)	15.8	15.8	28.9	10.4	10.4		37.9	34.2	49.2	36.7	30.6	51.1
Actuated g/C Ratio	0.20	0.20	0.35	0.13	0.13		0.46	0.43	0.60	0.43	0.39	0.64

Lanes, Volumes, Timings

1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.54	0.17	0.14	0.10	0.25		0.07	0.75	0.07	0.15	0.28	0.04
Uniform Delay, d1	30.4	28.1	0.0	34.3	6.6		8.9	21.1	1.0	9.2	17.1	0.0
Delay	33.9	34.5	6.2	41.5	17.8		9.9	21.0	3.4	10.5	18.1	1.1
LOS	C	C	A	D	B		A	C	A	B	B	A
Approach Delay		29.3			27.3			19.7			15.8	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	98	30	0	10	6		9	292	2	10	74	0
Queue Length 95th (ft)	173	78	36	32	51		26	426	20	29	120	5
Internal Link Dist (ft)		178			1124			77			256	
50th Up Block Time (%)								45%				
95th Up Block Time (%)	1%							45%				
Turn Bay Length (ft)			120									
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)								514				

Intersection Summary

Area Type: Other

Cycle Length: 235

Actuated Cycle Length: 79.4

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 21.4

Intersection Capacity Utilization 56.9%

Intersection LOS: C

ICU Level of Service A

Splits and Phases: 1: Manns Chapel Road & US 15-501

φ1	φ2	φ3	φ4
25 s	120 s	45 s	45 s
φ5	φ6		
25 s	120 s		












HCM Unsignalized Intersection Capacity Analysis
 3: Manns Chapel Road & Site Drive #2

Chatham County, NC

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↕	↕	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	448	16	0	85	6	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	498	18	0	94	7	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				258		
pX, platoon unblocked						
vC, conflicting volume			516		601	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			516		601	258
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	98
cM capacity (veh/h)			1046		432	741
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	332	184	94	20		
Volume Left	0	0	0	7		
Volume Right	0	18	0	13		
cSH	1700	1700	1046	598		
Volume to Capacity	0.20	0.11	0.00	0.03		
Queue Length (ft)	0	0	0	3		
Control Delay (s)	0.0	0.0	0.0	11.2		
Lane LOS				B		
Approach Delay (s)	0.0		0.0	11.2		
Approach LOS				B		
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			26.0%		ICU Level of Service	A











HCM Unsignalized Intersection Capacity Analysis
 4: Site Drive #3 & US 15-501

Chatham County, NC

							
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	3	0	1116	437	20	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (veh/h)	0	3	0	1240	486	22	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage (veh)							
Upstream signal (ft)					157		
pX, platoon unblocked	0.93	0.93	0.93				
vC, conflicting volume	1117	254	508				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1049	120	393				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	100	100				
cM capacity (veh/h)	207	844	1079				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	3	0	620	620	324	184
Volume Left	0	0	0	0	0	0	0
Volume Right	0	3	0	0	0	0	22
cSH	1700	844	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.36	0.36	0.19	0.11
Queue Length (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	9.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A					
Approach Delay (s)	9.3		0.0			0.0	
Approach LOS	A						
Intersection Summary							
Average Delay			0.0				
Intersection Capacity Utilization			38.4%		ICU Level of Service		A

HCM Unsignalized Intersection Capacity Analysis
5: Site Drive #4 & US 15-501

Chatham County, NC

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	22	9	1111	438	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	6	24	10	1234	487	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					307	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	1125	244	489			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1062	119	381			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	97	99			
cM capacity (veh/h)	202	850	1096			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	30	10	617	617	324	164
Volume Left	6	10	0	0	0	0
Volume Right	24	0	0	0	0	2
cSH	533	1096	1700	1700	1700	1700
Volume to Capacity	0.06	0.01	0.36	0.36	0.19	0.10
Queue Length (ft)	4	1	0	0	0	0
Control Delay (s)	12.2	8.3	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	12.2	0.1			0.0	
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			45.8%		ICU Level of Service	A

Lanes, Volumes, Timings

1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%			1%			-1%	
Storage Length (ft)	0		120	0		0	0		0	0		0
Storage Lanes	2		1	2		0	1		1	1		1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Leading Detector (ft)	50	50	50	50	50		50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frnt			0.850		0.940				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3416	1853	1575	3399	1733	0	1761	3522	1575	1778	3557	1591
Flt Permitted	0.950			0.950			0.152			0.369		
Satd. Flow (perm)	3416	1853	1575	3399	1733	0	282	3522	1575	691	3557	1591
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			63		12				31			197
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99	0.99
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		258			1204			157			336	
Travel Time (s)		3.9			18.2			1.9			4.2	
Volume (vph)	126	62	57	130	90	60	117	508	28	113	962	202
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	140	69	63	144	100	67	130	564	31	126	1069	224
Lane Group Flow (vph)	140	69	63	144	167	0	130	564	31	126	1069	224
Turn Type	Split		pm+ov	Split			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	4	4	5	3	3		5	2	3	1	6	4
Permitted Phases			4				2		2	6		6
Detector Phases	4	4	5	3	3		5	2	3	1	6	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.2	14.2	14.2	14.2	14.2		14.2	19.2	14.2	14.2	19.2	14.2
Total Split (s)	45.0	45.0	25.0	45.0	45.0	0.0	25.0	120.0	45.0	25.0	120.0	45.0
Total Split (%)	19%	19%	11%	19%	19%	0%	11%	51%	19%	11%	51%	19%
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7		4.7	4.7	4.7	4.7	4.7	4.7
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	Min	None	None	Min	None
Act Effct Green (s)	10.8	10.8	24.3	14.8	14.8		58.2	50.6	67.0	58.0	50.5	59.6
Actuated g/C Ratio	0.11	0.11	0.24	0.15	0.15		0.57	0.51	0.66	0.57	0.51	0.60

Lanes, Volumes, Timings
 1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.39	0.35	0.15	0.29	0.64		0.42	0.31	0.03	0.25	0.59	0.22
Uniform Delay, d1	43.5	43.3	0.0	39.9	39.0		7.8	15.7	0.0	7.7	18.9	0.5
Delay	37.9	40.2	8.2	33.2	32.9		10.1	18.2	2.5	9.9	21.7	1.4
LOS	D	D	A	C	C		B	B	A	A	C	A
Approach Delay		31.6			33.0			16.1			17.5	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	35	34	0	34	76		31	112	0	30	254	3
Queue Length 95th (ft)	85	97	35	79	180		76	201	11	73	434	26
Internal Link Dist (ft)		178			1124			77			256	
50th Up Block Time (%)								22%			4%	
95th Up Block Time (%)							4%	36%			25%	
Turn Bay Length (ft)			120									
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)							3	165				

Intersection Summary

Area Type: Other

Cycle Length: 235

Actuated Cycle Length: 98.8

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 20.3

Intersection Capacity Utilization 68.6%

Intersection LOS: C

ICU Level of Service B

Splits and Phases: 1: Manns Chapel Road & US 15-501

φ1	φ2	φ3	φ4
25 s	120 s	45 s	45 s
φ5	φ6		
25 s	120 s		














HCM Unsignalized Intersection Capacity Analysis
 3: Manns Chapel Road & Site Drive #2

Chatham County, NC

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	239	14	3	406	13	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	266	16	3	451	14	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				258		
pX, platoon unblocked					0.93	
vC, conflicting volume			281		731	141
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			281		711	141
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	99
cM capacity (veh/h)			1278		341	882
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	177	104	454	20		
Volume Left	0	0	3	14		
Volume Right	0	16	0	6		
cSH	1700	1700	1278	411		
Volume to Capacity	0.10	0.06	0.00	0.05		
Queue Length (ft)	0	0	0	4		
Control Delay (s)	0.0	0.0	0.1	14.2		
Lane LOS			A	B		
Approach Delay (s)	0.0		0.1	14.2		
Approach LOS				B		
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			36.8%		ICU Level of Service	A











HCM Unsignalized Intersection Capacity Analysis
 4: Site Drive #3 & US 15-501

Chatham County, NC

							
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations				 	 		
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	0	0	0	653	1123	25	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (veh/h)	0	0	0	726	1248	28	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage (veh)							
Upstream signal (ft)					157		
pX, platoon unblocked	0.78	0.78	0.78				
vC, conflicting volume	1624	638	1276				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1518	251	1070				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	100	100	100				
cM capacity (veh/h)	85	583	504				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	0	363	363	832	444
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	28
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.21	0.21	0.49	0.26
Queue Length (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A					
Approach Delay (s)	0.0		0.0			0.0	
Approach LOS	A						
Intersection Summary							
Average Delay			0.0				
Intersection Capacity Utilization			39.5%		ICU Level of Service		A

HCM Unsignalized Intersection Capacity Analysis
 5: Site Drive #4 & US 15-501

Chatham County, NC

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	4	28	7	649	1117	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	4	31	8	721	1241	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					307	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	1621	624	1248			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1513	234	1035			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	95	99			
cM capacity (veh/h)	85	598	520			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	36	8	361	361	827	420
Volume Left	4	8	0	0	0	0
Volume Right	31	0	0	0	0	7
cSH	341	520	1700	1700	1700	1700
Volume to Capacity	0.10	0.01	0.21	0.21	0.49	0.25
Queue Length (ft)	9	1	0	0	0	0
Control Delay (s)	16.8	12.0	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	16.8	0.1			0.0	
Approach LOS	C					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			46.2%		ICU Level of Service	A

Lanes, Volumes, Timings
1: Manns.Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%				1%			-1%
Storage Length (ft)	0		120	0		0		0		0	0	
Storage Lanes	2		1	2		0		1		1	1	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Leading Detector (ft)	50	50	50	50	50		50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor												
Fr			0.850		0.886					0.850		
Fit Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	3416	1853	1575	3399	1634	0	0	1761	3522	1575	1778	3557
Fit Permitted	0.950			0.950				0.426			0.124	
Satd. Flow (perm)	3416	1853	1575	3399	1634	0	0	790	3522	1575	232	3557
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			87		50					66		
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99
Link Speed (mph)		45			45				55			55
Link Distance (ft)		258			1204				307			556
Travel Time (s)		3.9			18.2				3.8			6.9
Volume (vph)	445	60	78	40	14	45	7	137	963	59	40	404
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			0%
Adj. Flow (vph)	494	67	87	44	16	50	8	152	1070	66	44	449
Lane Group Flow (vph)	494	67	87	44	66	0	0	160	1070	66	44	449
Turn Type	Split		Perm	Split		custom	pm+pt		pm+ov	pm+pt		
Protected Phases	4	4		3	3			5	2	3	1	6
Permitted Phases			4				5	2		2	6	
Detector Phases	4	4	4	3	3		5	5	2	3	1	6
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	12.0	7.0	7.0	12.0
Minimum Split (s)	14.2	14.2	14.2	14.2	14.2		14.2	14.2	19.2	14.2	14.2	19.2
Total Split (s)	38.4	38.4	38.4	19.5	19.5	0.0	18.8	18.8	63.9	19.5	18.2	63.3
Total Split (%)	27%	27%	27%	14%	14%	0%	13%	13%	46%	14%	13%	45%
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7		4.7	4.7	4.7	4.7	4.7	4.7
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	None	Min	None	None	Min
Act Effct Green (s)	18.8	18.8	18.8	10.5	10.5			38.7	33.9	49.0	35.0	29.2
Actuated g/C Ratio	0.23	0.23	0.23	0.12	0.12			0.45	0.41	0.58	0.40	0.35

Lanes, Volumes, Timings
 1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	SBR
Lane Configurations	7
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	0
Storage Lanes	1
Total Lost Time (s)	5.0
Leading Detector (ft)	50
Trailing Detector (ft)	0
Turning Speed (mph)	9
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1591
Flt Permitted	
Satd. Flow (perm)	1591
Right Turn on Red	Yes
Satd. Flow (RTOR)	51
Headway Factor	0.99
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	46
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.90
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	51
Lane Group Flow (vph)	51
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	14.2
Total Split (s)	38.4
Total Split (%)	27%
Yellow Time (s)	4.7
All-Red Time (s)	2.5
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	52.9
Actuated g/C Ratio	0.64

Lanes, Volumes, Timings
1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
v/c Ratio	0.63	0.16	0.20	0.11	0.27			0.33	0.74	0.07	0.16	0.36
Uniform Delay, d1	30.5	27.1	0.0	35.6	8.6			10.8	22.4	0.0	10.5	19.9
Delay	33.0	32.6	8.1	43.4	19.4			12.6	22.9	3.0	12.7	22.1
LOS	C	C	A	D	B			B	C	A	B	C
Approach Delay		29.6			29.0				20.6			19.4
Approach LOS		C			C				C			B
Queue Length 50th (ft)	138	32	0	12	9			45	288	0	12	97
Queue Length 95th (ft)	233	81	41	35	56			97	432	20	33	168
Internal Link Dist (ft)		178			1124				227			476
50th Up Block Time (%)									16%			
95th Up Block Time (%)	20%								28%			
Turn Bay Length (ft)			120									
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)	50								238			

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 82.4

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 23.0

Intersection LOS: C

Intersection Capacity Utilization 68.7%

ICU Level of Service B

Splits and Phases: 1: Manns Chapel Road & US 15-501

ø1	ø2	ø3	ø4
18.2 s	63.9 s	19.5 s	38.4 s
ø5	ø6		
18.8 s	63.3 s		

Lanes, Volumes, Timings
1: Manns Chapel Road & US 15-501

Chatham County, NC

↙

Lane Group	SBR
v/c Ratio	0.05
Uniform Delay, d1	0.0
Delay	1.3
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	7
Internal Link Dist (ft)	
50th Up Block Time (%)	
95th Up Block Time (%)	
Turn Bay Length (ft)	
50th Bay Block Time %	
95th Bay Block Time %	
Queuing Penalty (veh)	
Intersection Summary	

HCM Unsignalized Intersection Capacity Analysis
 2: Manns Chapel Road & Site Drive #1

Chatham County, NC

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↙	↑	↖	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	437	38	116	82	28	137
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	486	42	129	91	31	152
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				488		
pX, platoon unblocked						
vC, conflicting volume			528		834	486
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			528		834	486
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		89	74
cM capacity (veh/h)			1039		296	582
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	486	42	129	91	183	
Volume Left	0	0	129	0	31	
Volume Right	0	42	0	0	152	
cSH	1700	1700	1039	1700	500	
Volume to Capacity	0.29	0.02	0.12	0.05	0.37	
Queue Length (ft)	0	0	11	0	42	
Control Delay (s)	0.0	0.0	9.0	0.0	16.3	
Lane LOS			A		C	
Approach Delay (s)	0.0		5.2		16.3	
Approach LOS					C	
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			56.3%		ICU Level of Service	A











HCM Unsignalized Intersection Capacity Analysis
 3: Manns Chapel Road & Site Drive #2

Chatham County, NC

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑		↑
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	561	23	0	198	0	23
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	623	26	0	220	0	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				258		
pX, platoon unblocked					0.95	
vC, conflicting volume			649		856	324
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			649		848	324
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			933		285	671
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	416	233	220	26		
Volume Left	0	0	0	0		
Volume Right	0	26	0	26		
cSH	1700	1700	1700	671		
Volume to Capacity	0.24	0.14	0.13	0.04		
Queue Length (ft)	0	0	0	3		
Control Delay (s)	0.0	0.0	0.0	10.6		
Lane LOS				B		
Approach Delay (s)	0.0		0.0	10.6		
Approach LOS				B		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			29.7%		ICU Level of Service	A











HCM Unsignalized Intersection Capacity Analysis
 5: Site Drive #4 & US 15-501

Chatham County, NC

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	63	0	1161	431	87
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	0	70	0	1290	479	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				307		
pX, platoon unblocked	0.92	0.92	0.92			
vC, conflicting volume	1124	239	576			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1050	92	456			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	100			
cM capacity (veh/h)	205	874	1016			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	70	645	645	239	239	97
Volume Left	0	0	0	0	0	0
Volume Right	70	0	0	0	0	97
cSH	874	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.38	0.38	0.14	0.14	0.06
Queue Length (ft)	7	0	0	0	0	0
Control Delay (s)	9.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	9.5	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			39.8%		ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis
 12: Site Drive #5 & US 15-501

Chatham County, NC

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	22	0	1186	493	27
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	0	24	0	1318	548	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					567	
pX, platoon unblocked	0.94	0.94	0.94			
vC, conflicting volume	1207	274	578			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1156	165	488			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	178	800	1008			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	24	659	659	274	274	30
Volume Left	0	0	0	0	0	0
Volume Right	24	0	0	0	0	30
cSH	800	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.39	0.39	0.16	0.16	0.02
Queue Length (ft)	2	0	0	0	0	0
Control Delay (s)	9.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	9.6	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			40.6%		ICU Level of Service	A

Lanes, Volumes, Timings
1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		1%			2%				1%			-1%
Storage Length (ft)	0		120	0		0		0		0	0	
Storage Lanes	2		1	2		0		1		1	1	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Leading Detector (ft)	50	50	50	50	50		50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor												
Frt			0.850		0.941					0.850		
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	3416	1853	1575	3399	1735	0	0	1761	3522	1575	1778	3557
Flt Permitted	0.950			0.950				0.086			0.446	
Satd. Flow (perm)	3416	1853	1575	3399	1735	0	0	159	3522	1575	835	3557
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			72		20					33		
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.99	0.99
Link Speed (mph)		45			45				55			55
Link Distance (ft)		258			1204				307			556
Travel Time (s)		3.9			18.2				3.8			6.9
Volume (vph)	204	66	65	134	93	60	34	186	496	30	113	1028
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%				0%			0%
Adj. Flow (vph)	227	73	72	149	103	67	38	207	551	33	126	1142
Lane Group Flow (vph)	227	73	72	149	170	0	0	245	551	33	126	1142
Turn Type	Split		Perm	Split		custom	pm+pt		pm+ov	pm+pt		
Protected Phases	4	4		3	3			5	2	3	1	6
Permitted Phases			4			5	2			2	6	
Detector Phases	4	4	4	3	3	5	5	2	3	1	6	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0	7.0	7.0	12.0	
Minimum Split (s)	14.2	14.2	14.2	14.2	14.2		14.2	14.2	19.2	14.2	14.2	19.2
Total Split (s)	20.0	20.0	20.0	26.0	26.0	0.0	31.0	31.0	79.8	26.0	14.2	63.0
Total Split (%)	14%	14%	14%	19%	19%	0%	22%	22%	57%	19%	10%	45%
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7		4.7	4.7	4.7	4.7	4.7	4.7
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	
Act Effct Green (s)	12.5	12.5	12.5	14.7	14.7			60.3	50.0	70.0	49.0	39.5
Actuated g/C Ratio	0.12	0.12	0.12	0.14	0.14			0.58	0.48	0.67	0.46	0.38

Lanes, Volumes, Timings
 1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	SBR
Lane Configurations	7
Ideal Flow (vphpl)	1900
Lane Width (ft)	12
Grade (%)	
Storage Length (ft)	0
Storage Lanes	1
Total Lost Time (s)	5.0
Leading Detector (ft)	50
Trailing Detector (ft)	0
Turning Speed (mph)	9
Lane Util. Factor	1.00
Ped Bike Factor	
Fr _t	0.850
Flt Protected	
Satd. Flow (prot)	1591
Flt Permitted	
Satd. Flow (perm)	1591
Right Turn on Red	Yes
Satd. Flow (RTOR)	224
Headway Factor	0.99
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Volume (vph)	205
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	0.90
Growth Factor	100%
Heavy Vehicles (%)	2%
Bus Blockages (#/hr)	0
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	228
Lane Group Flow (vph)	228
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phases	
Minimum Initial (s)	7.0
Minimum Split (s)	14.2
Total Split (s)	20.0
Total Split (%)	14%
Yellow Time (s)	4.7
All-Red Time (s)	2.5
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	52.0
Actuated g/C Ratio	0.50

Lanes, Volumes, Timings
1: Manns Chapel Road & US 15-501

Chatham County, NC

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
v/c Ratio	0.56	0.33	0.29	0.31	0.65			0.72	0.33	0.03	0.27	0.85
Uniform Delay, d1	43.5	42.3	0.0	40.4	37.3			21.2	16.9	0.0	10.0	27.9
Delay	48.0	50.0	12.9	44.5	41.7			25.3	17.4	1.9	11.4	30.1
LOS	D	D	B	D	D			C	B	A	B	C
Approach Delay		41.6			43.0				19.1			24.1
Approach LOS		D			D				B			C
Queue Length 50th (ft)	72	44	0	45	93			102	120	0	34	348
Queue Length 95th (ft)	149	116	49	97	211			228	179	10	70	557
Internal Link Dist (ft)		178			1124				227			476
50th Up Block Time (%)												
95th Up Block Time (%)								4%				10%
Turn Bay Length (ft)			120									
50th Bay Block Time %												
95th Bay Block Time %		1%										
Queuing Penalty (veh)								5				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 104.1

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 26.9

Intersection Capacity Utilization 77.8%

Intersection LOS: C

ICU Level of Service C

Splits and Phases: 1: Manns Chapel Road & US 15-501

14.2 s	79.8 s	26 s	20 s
31 s	63 s		

Lanes, Volumes, Timings
1: Manns Chapel Road & US 15-501

Chatham County, NC

↙

Lane Group	SBR
v/c Ratio	0.25
Uniform Delay, d1	0.1
Delay	1.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	1
Queue Length 95th (ft)	21
Internal Link Dist (ft)	
50th Up Block Time (%)	
95th Up Block Time (%)	
Turn Bay Length (ft)	
50th Bay Block Time %	
95th Bay Block Time %	
Queuing Penalty (veh)	
Intersection Summary	

HCM Unsignalized Intersection Capacity Analysis
 2: Manns Chapel Road & Site Drive #1

Chatham County, NC

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	239	29	97	386	47	87
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	266	32	108	429	52	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				488		
pX, platoon unblocked					0.97	
vC, conflicting volume			298		910	266
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			298		907	266
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		81	87
cM capacity (veh/h)			1263		271	773
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	266	32	108	429	149	
Volume Left	0	0	108	0	52	
Volume Right	0	32	0	0	97	
cSH	1700	1700	1263	1700	468	
Volume to Capacity	0.16	0.02	0.09	0.25	0.32	
Queue Length (ft)	0	0	7	0	34	
Control Delay (s)	0.0	0.0	8.1	0.0	16.2	
Lane LOS			A		C	
Approach Delay (s)	0.0		1.6		16.2	
Approach LOS					C	
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			41.3%			
ICU Level of Service						A











HCM Unsignalized Intersection Capacity Analysis
 3: Manns Chapel Road & Site Drive #2

Chatham County, NC

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑		↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	314	21	0	483	0	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	349	23	0	537	0	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)				258		
pX, platoon unblocked					0.88	
vC, conflicting volume			372		897	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			372		884	186
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	97
cM capacity (veh/h)			1183		252	824
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	233	140	537	23		
Volume Left	0	0	0	0		
Volume Right	0	23	0	23		
cSH	1700	1700	1700	824		
Volume to Capacity	0.14	0.08	0.32	0.03		
Queue Length (ft)	0	0	0	2		
Control Delay (s)	0.0	0.0	0.0	9.5		
Lane LOS				A		
Approach Delay (s)	0.0		0.0	9.5		
Approach LOS				A		
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			32.4%		ICU Level of Service	A













HCM Unsignalized Intersection Capacity Analysis
 5: Site Drive #4 & US 15-501

Chatham County, NC

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	81	0	721	1141	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	0	90	0	801	1268	114
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				307		
pX, platoon unblocked	0.72	0.72	0.72			
vC, conflicting volume	1668	634	1382			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1538	96	1139			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	87	100			
cM capacity (veh/h)	76	675	437			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	90	401	401	634	634	114
Volume Left	0	0	0	0	0	0
Volume Right	90	0	0	0	0	114
cSH	675	1700	1700	1700	1700	1700
Volume to Capacity	0.13	0.24	0.24	0.37	0.37	0.07
Queue Length (ft)	11	0	0	0	0	0
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	11.1	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			49.0%		ICU Level of Service	A

HCM Unsignalized Intersection Capacity Analysis
 12: Site Drive #5 & US 15-501

Chatham County, NC

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	92	0	742	1154	92
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	0	102	0	824	1282	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)					567	
pX, platoon unblocked	0.73	0.73	0.73			
vC, conflicting volume	1694	641	1384			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1580	131	1153			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	84	100			
cM capacity (veh/h)	73	650	437			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	102	412	412	641	641	102
Volume Left	0	0	0	0	0	0
Volume Right	102	0	0	0	0	102
cSH	650	1700	1700	1700	1700	1700
Volume to Capacity	0.16	0.24	0.24	0.38	0.38	0.06
Queue Length (ft)	14	0	0	0	0	0
Control Delay (s)	11.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	11.6	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			50.1%		ICU Level of Service	A